

The FBR logo is a red circular emblem with the letters 'FBR' in a bold, italicized, sans-serif font. The 'F' and 'B' are connected, and the 'R' has a small dot above it. The entire logo is set against a background of a construction site.

FBR

Spark Plus Australian Equities Day Presentation

**FBR Limited
(ASX:FBR | OTCQB:FBRKF)
Mike Pivac – Managing Director & CEO**



Who is FBR?



- FBR is an Australian based Robotics technology company listed on the ASX and OTCQB exchanges (ASX:FBR; OTCQB:FBRKF)
- We are a Founder-led team of world-leading specialists and engineers, recognised by academics and industry leaders for our advancement in outdoor robotics
- We design, develop and build the world's most advanced bricklaying robot, the Hadrian X[®] and have spent A\$200m in research and development, to commercialise our technology
- We are world leaders in “through the boom” robotic delivery of materials and products with a significant IP portfolio comprising 143 granted patents, 107 patents pending, across 41 patent families
- We seek to address problems that require robotic solutions in dynamic environments, such as our flagship Hadrian X[®], enabled by our Dynamic Stabilisation Technology[®] (DST[®])
- We have a strong, supportive shareholder base with over 13,000 shareholders, including:
 - Brickworks (~15%), Australia's largest brick manufacturer
 - M&G Investment Management (14%) – global fund manager
 - Fidelity (10%) – global fund manager
 - Founders (10%)



Introducing hadrianx[®]

- The most advanced, dynamically-stabilised block-laying robot in the world
- Fully mobile, highway-capable with the ability to build structural walls up to three storeys high, from the roadside or within the build site.
- Modular design with distributed control architecture, featuring a 32-metre-long (105ft), stabilized, telescoping and traversing boom for fast and accurate product placement.
- Fast to setup, fast to leave. Robotic delivery system suitable for other building material placement.
- Utilizing construction adhesive – is waterless and mortarless, with no sand or cement needed.
- FBR IP suite with potential for multiple use cases outside of the Construction sector.



Why automate construction?

Confluence of factors detrimentally affecting the industry

- ✗ Labour Constraints – availability and organisation of labour
- ✗ Financial volatility (fluctuating material and labour costs)
- ✗ A widening deficit of masons and bricklayers in key markets
- ✗ Housing supply currently unable to meet demand – an additional 2 Billion people will need to be housed in the next 30 years
- ✗ Construction is a significant risk contributor to health and environment

Why use the Hadrian X®?

- ✓ A key step towards full-digitalisation of the construction site
- ✓ Provides builders with certainty on timing of wall delivery, and faster progression to completion:
 - Reduction in project delays positively impacts project economics
 - Walls can be built in days and on-time
 - Enables follow-on trades to work to schedule
- ✓ Faster, safer and more accurate
- ✓ Drastically reduces on-site waste generation
- ✓ Able to work 24/7, in most weather conditions



Hadrian X® building a structure in Perth, generating zero on-site masonry waste

The writing is on the wall...

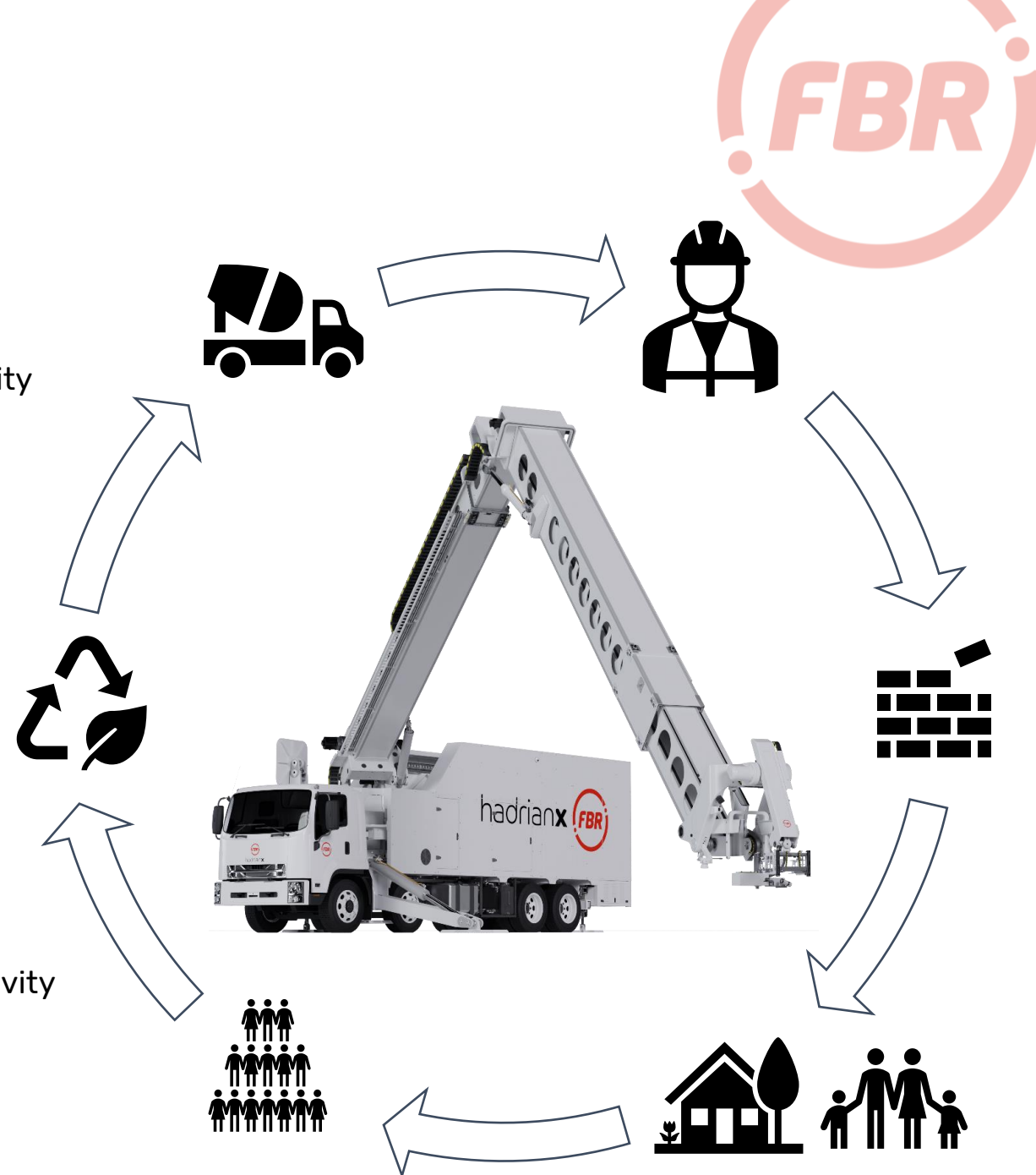
The Opportunity

- Significant macroeconomic tailwinds face the industry as the impetus to improve living standards, maintain growth and embrace sustainable technology becomes apparent
 - M&A/consolidation in construction and building materials industries as large players seek to optimise their positioning
 - Governments focus on initiatives to boost social/affordable housing, commercial and infrastructure
- FBR well-positioned as owner of the world's most advanced construction robot to enter key global markets to provide automated construction solutions in the low-rise residential and commercial construction sectors



Who benefits?

- **Builders**
 - Cost and time efficiencies from automated robotic construction
 - Mitigated risks of delays improves resource allocation and profitability
- **Workers**
 - Opportunity to upskill and work with advanced technology
 - Safer workplaces with less risk of death and injury
- **Brick manufacturers**
 - Improved sales from block products
 - Opportunity to generate new revenue streams (sale & laying of product)
- **Home buyers**
 - Improved accessibility to masonry constructed homes
 - Faster builds/less delays
- **Governments**
 - Access to robotic technology with the potential to improve productivity in construction sector
- **Environment**
 - Reduction in emissions and waste generation from construction process





Sustainability in Construction

Environment

- **Construction accounts for ~30% of the world's emissions and waste**
- **Hadrian X® reduces environmental impact of the construction process**
 - Maintains site cleanliness, massively reduces waste generation and worksite hazards, and the subsequent cost of waste removal to landfill
- **No mortar, sand, cement or water required on site**
 - Eliminates the risk of exposure to hazardous silica dust, protecting workers and the broader public
- Block agnostic laying capability, ensuring forward compatibility with future developments in sustainable block materials and sizes and weights.

Health & Safety

- **Construction accounts for more worksite injuries and deaths than most other industries**
- **Reduces occurrences of repetitive stress injuries, strains, and falls**, while virtually eliminating risks during the undertaking of automated block laying
- **Removes virtually all manual labour** from construction site during structure build (except minimal FBR quality control interactions)
- **No injuries due to heavy manual handling of products**
 - Hadrian X® handles, cuts and delivers all blocks necessary for the structure
- **Less people required at work site** during construction and less trips to site required by workers



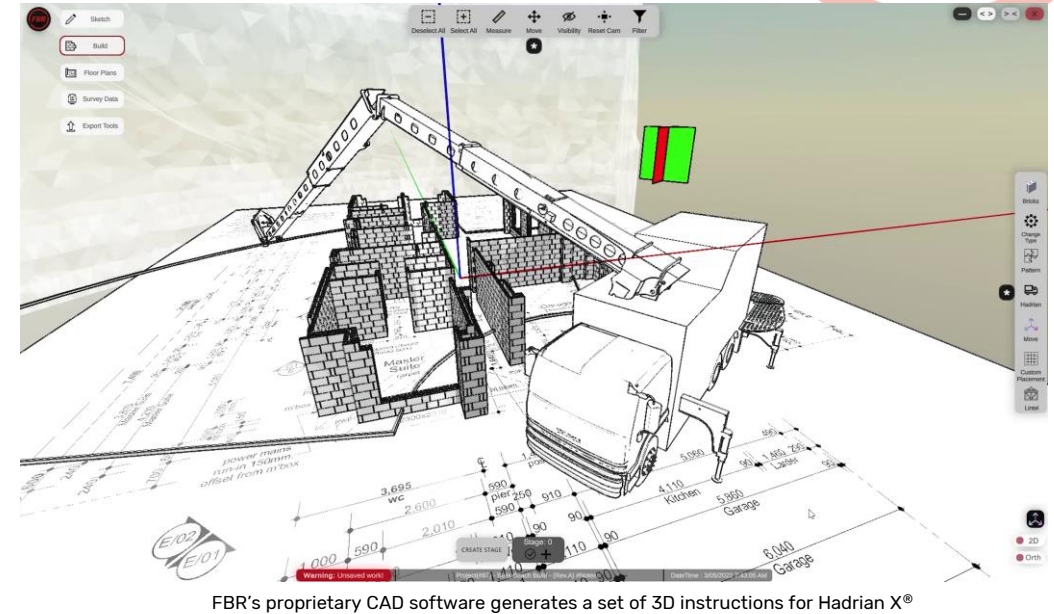
WaaS® Commercial Model



- **WaaS®** is the digital delivery of high quality, fixed price, structural block wall
- **WaaS®** operating entity supplies blocks and robotically constructs walls onsite to precise specifications of a digital architectural plan
- **WaaS®** allows customers to access significant improvements in speed, accuracy, reliability, safety and waste, without building robotic construction capability into their respective businesses

General acquisition of order process:

- Builder requests quote for wall(s) and sends architectural plans to FBR
- FBR proprietary BIM software converts plans to Hadrian X® build file and provides quote for supply and lay of walls
- FBR sends fixed price quote, estimated build time and waste estimate to builder
- Builder agrees to quote and requests date for service
- FBR sends Hadrian X® to site on appointed day and builds structure
- FBR bills for 100% of work – Labour and materials



Hadrian X® **Remote Support** **Operators**
Maintenance **Contracts for walls**
Lease of Hadrian X® from strategic partners

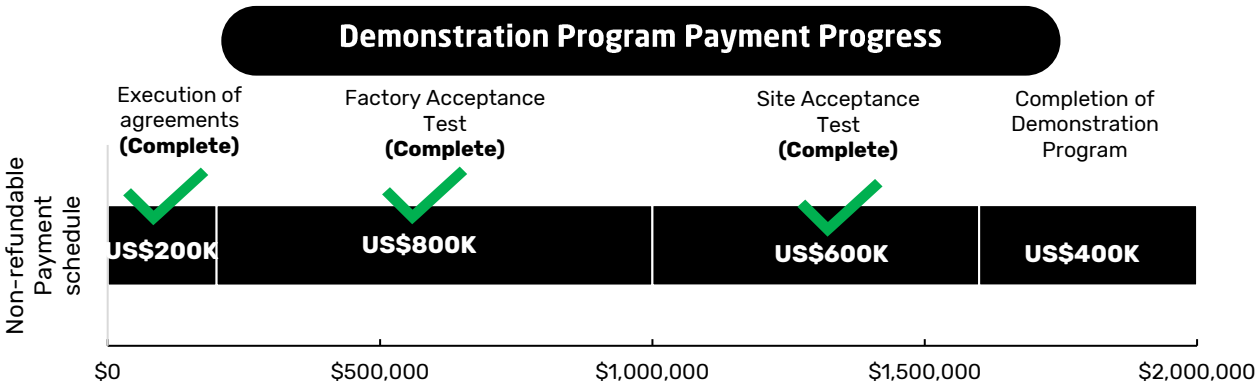


U.S. Demonstration Program

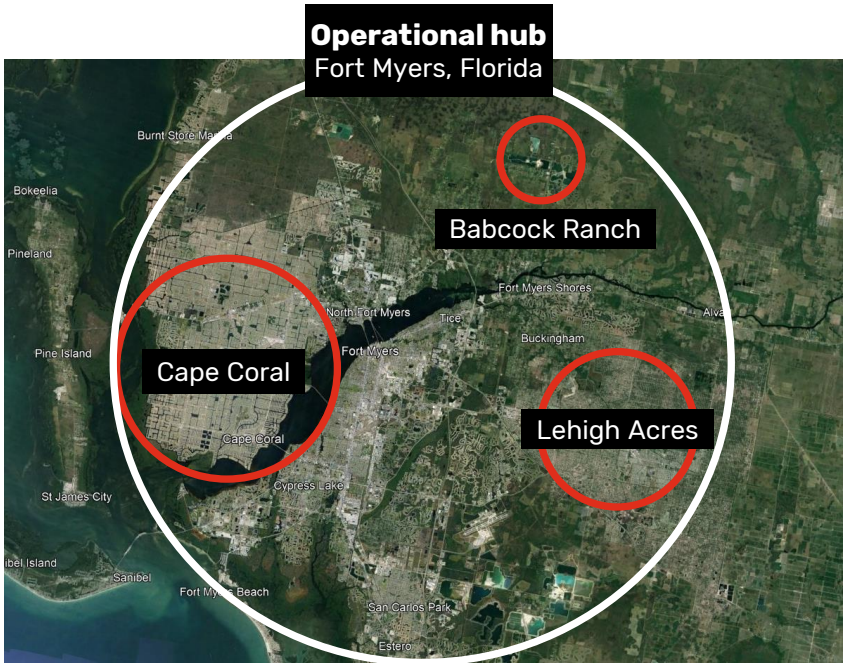
- Currently undertaking 10 home Demonstration Program with CRH Ventures in Fort Myers, Florida
- CRH Ventures may exercise option to form JV any time up until 45 days post-completion of Demonstration Program
- Upon formation of JV, CRH Ventures will provide JV with a US\$40m revolving loan facility and an initial purchase order for 20 Hadrian X[®] robots valued at US\$40m
- Pathway to fleet of 300 Hadrian X[®] robots set out with purchase order tranches that set base expansion rate for the JV and can be accelerated by agreement to meet the needs of the market¹

Exclusive U.S. Demonstration Program & JV Option

- CRH Ventures, subsidiary of CRH plc (NYSE:CRH, US\$58bn market cap)
- A leading supplier of building materials with established operations globally
- A U.S. JV providing WaaS[®] will generate new revenue streams and differentiated products relative to existing business model:
 - Revenue from delivery of erected wall (WaaS[®]), not just manufacture of blocks
 - Construction automation improves competitive advantage and efficiency
 - Delivering customers real-time advantages and cost savings



1. See slide 18 of presentation for rubric outlining details of pathway to 300 Hadrian X[®] robots in the agreement
 2. All dollar figures in this chart refer to U.S. Dollars (US\$)



Why focus on the U.S.?

- One of the largest low-rise residential construction markets in the world
- FBR's technology could vastly improve the output and sustainability of the construction industry
- Moody's estimates a minimum of approximately 1.5 million new homes per year just to meet demand in the U.S.¹
- A chronic undersupply of new housing since the Global Financial Crisis, leaves an estimated deficit of up to 20 million homes
- Builders are seeking to reduce costs and improve margins, however, material cost and availability of labour is continuing to be a significant challenge

Initial target markets

- High concentration of new build opportunities in Florida and Texas
- Ready access to materials and infrastructure
- Existing high-volume market exclusively masonry construction, which is primed for robotic disruption
- Areas prone to hurricanes/severe weather conditions and high wind loads (southern states of the U.S.) require masonry structures
- Between July 2022-23, Florida and Texas experienced increased net migration (domestic and international) of +373k and +315k people respectively

U.S. Housing Supply Shortfall



Top 5 States (new residential builds)							
('000s)	2018	2019	2020	2021	2022	5 Yr. CAGR	% Single Family Homes
Texas	192.9	209.9	230.5	266.0	263.1	6.4%	59%
Florida	144.4	154.3	164.1	213.5	212.0	8.0%	64%
California	113.5	110.2	106.1	119.4	119.7	1.1%	63%
North Carolina	71.7	71.3	80.5	94.9	91.9	5.1%	70%
Georgia	59.3	53.8	55.8	67.2	77.2	5.4%	61%
U.S. Total	1,329.0	1,386.3	1,471.2	1,737.2	1,765.3	4.6%	59%

Key near-term catalysts for FBR Shareholders

Event	Indicative timing
✓ Successful execution of Factory Acceptance Test (FAT)	Completed
✓ Transport of Hadrian X® to the US	Completed
✓ Successful execution of Site Acceptance Test (SAT) in Florida	Completed
✓ Formal appointment of builders for Demonstration Program	Completed
✓ Completion of first home	Completed
❑ Completion of 10 house Demonstration Program	Q4 CY2024
❑ VIP Demonstration - Media, Strategic Stakeholders (re-scheduled due to bad weather)	Q4 CY2024
❑ JV Option exercised	Up to 45 days post completion of Demonstration Program
❑ CRH Ventures Americas to provide US\$40m debt facility to Fastbrick Americas JV	At exercise of JV Option
❑ FBR to receive US\$40m purchase order for first tranche of 20 Hadrian X® units (of potential 300 machine order)	At exercise of JV Option
❑ Commercial wall offtake agreements with key builder clients in Florida	Q1 CY2025

Corporate Snapshot

Capital structure

Market capitalisation (as at 17/09/2024)	\$235m
Ordinary shares on issue	4.8b
Average daily volume (last 3 months)	12.2m
Pro-forma cash balance (30 Jun 2024)	\$18.8m*

*excluding capital raise costs

Directors & Management

Richard Grellman AM	Non-Executive Chairman
Glenn Cooper	Non-Executive Director
Shannon Robinson	Non-Executive Director
Nancy Milne AOM	Non-Executive Director
Mike Pivac	Executive Director – MD & CEO
Mark Pivac	Executive Director – CTO
Rowan Caren	Chief Financial Officer
Kiel Chivers	Chief Operating Officer
Jonathan Lawe Davies	General Counsel

Share price performance (12 months)

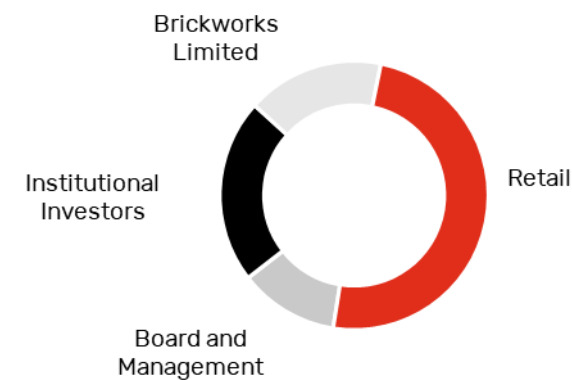


Shareholders

Brickworks (ASX:BKW)	15.3%*
M & G Investments	14.1%*
Fidelity	9.9%*
Mark Pivac (Founder)	7.0%
Mike Pivac (Founder)	2.7%

*as per last substantial holding notice

Register



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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.



Appendices

JV Option Exercise

- Upon exercising of JV Option CRH provides JV with US\$40m revolving loan facility to fund Hadrian X[®] purchases from FBR, and initial purchase order for 20 Hadrian X[®] robots (up to \$US40m of revenue to FBR)
- FBR to fund 51% of JV start-up costs only, expected to be ~US\$2.0m with remainder of working capital to be funded via CRH loan facility and ongoing US WaaS revenue
- Each JV partner entitled to two Board members each; CEO (appointed by the Board) to oversee day-to-day operations
- As soon as practicable post-commencement of JV, FBR to swap out the first Australian-spec Hadrian X[®] unit with a U.S.-spec Hadrian X[®] unit at its cost
- Initial operation will commence in Florida
- FBR will provide fixed price Hadrian X[®] maintenance & repair services and personnel training services to the JV at a rate of US\$220,000 per Hadrian X[®] per year, indexed to US CPI from 31 December 2023
- A CRH affiliate to preferentially supply blocks to the JV

FBR grants JV exclusive Hadrian X[®] supply rights covering U.S.

Majority of FBR's global annual Hadrian X[®] manufacturing capacity reserved for JV for first 30 units / year (includes licensed OEMs)

US\$40m revolving debt facility for JV to fund Hadrian X[®] purchases from FBR

FBR supplies Hadrian X[®] operator training and machines maintenance services to JV for fixed price

**CRH
VENTURES**

49%
ownership

**US Joint Venture
Entity**

51%
ownership



Path to 300 Hadrian X[®]'s in the U.S.

Purchase Order	Quantum	Conditions
Initial 20 Hadrian X [®] units	<ul style="list-style-type: none"> – US\$2.0m each³, US\$1.1m deposit, remainder paid on delivery and completion of SAT – 3 units delivered ASAP, remaining 17 ordered in batches of 3 (except final batch of 2 units) 	<ul style="list-style-type: none"> – Annual interest rate, payable quarterly (6-month USD SOFR + 1.5%) – Additional instalments triggered by: <ul style="list-style-type: none"> – 30% gross margin¹, 75% utilisation over 6 months for incumbent² fleet – 30% gross margin, 50% utilisation rate over 2 months on 3 most recently delivered units
Second 39 Hadrian X [®] units	<ul style="list-style-type: none"> – US\$2.0m each³, US\$1.1m deposit, remainder paid on delivery and completion of SAT – Ordered in batches of 3 Hadrian X[®] units 	<ul style="list-style-type: none"> – Annual interest rate, payable quarterly (6-month USD SOFR + 3.0%) – Hadrian X[®] units ordered under the same terms and subject to the same requirements as above
Third 40 Hadrian X [®] units	<ul style="list-style-type: none"> – US\$2.0m each³, US\$1.1m deposit, remainder paid on delivery and completion of SAT – Ordered in batches of 3 Hadrian X[®] units (except final batch of 1 unit) 	<ul style="list-style-type: none"> – Annual interest rate, payable quarterly (6-month USD SOFR + 4.0%) – Hadrian X[®] units ordered under the same terms and subject to the same requirements as above
Fourth 200 Hadrian X [®] units (40 options of 5 units)	<ul style="list-style-type: none"> – JV granted 40 options to purchase Hadrian X[®] units in tranches of 5 at lesser of <ul style="list-style-type: none"> – US\$2.5m each³; or – price charged by FBR's third-party manufacturer 	<ul style="list-style-type: none"> – If JV does not exercise the options for at least 20 Hadrian X[®] units per year, all remaining options immediately terminate

1. Gross margin refers to direct revenues and costs incurred at site, and excludes JV overhead, corporate costs, and depreciation of Hadrian X[®] units

2. Incumbent fleet is the fleet of Hadrian X[®] units held by the JV minus the three most recently delivered units

3. CPI adjusted

4. Refer ASX Announcement dated 18 January 2024 for further detail