

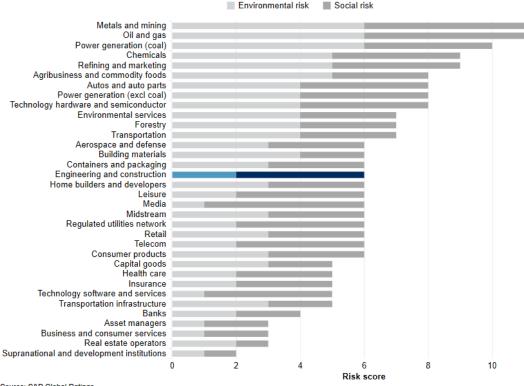
# Climate Change and ESG is finally top of mind

Many Investors and companies are being measured on ESG (Environmental, Social and Governance) values. JustBioFiber can source local, use much less energy per sq. ft., sequester potentially millions of tons of CO2 and is community and socially beneficial that greatly enhances your ESG scorecard.

Cement and other heavy building materials are not sustainable. Environmental risk is relevant for cement producers and other heavy building material companies, given they typically crush and move raw materials to produce their end-products, which often requires a substantial use of fuel, and frequently results in greenhouse gas (GHG) emissions, waste, and pollution.

Cement, steel, ammonia, and ethylene companies account for about half of total CO2 emissions in the industrial sector. For example, by intensifying the use of alternative raw materials to reduce the amount of clinker necessary (clinker being a precursor to powder cement; producing clinker accounts for most of the energy used during cement production).

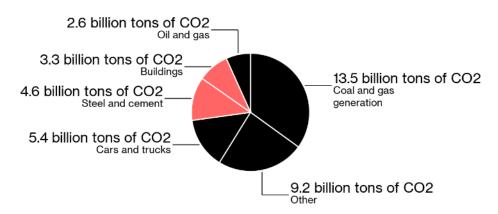
#### **ESG Sector Risk Atlas**



Source: S&P Global Ratings

## **Construction Pollution**

Emissions from steel, cement and buildings outpaced cars and trucks in 2017



2

# Sustainable Building Material Manufacturing in the US

The industry is anticipated to continue its upward trajectory over the five years to 2025, as a result of increase in demand from construction activities over the past five years.

Revenue for the industry is projected to increase at an annualized rate of 1.7% over the next five years to 2025, to total \$86.2 billion.

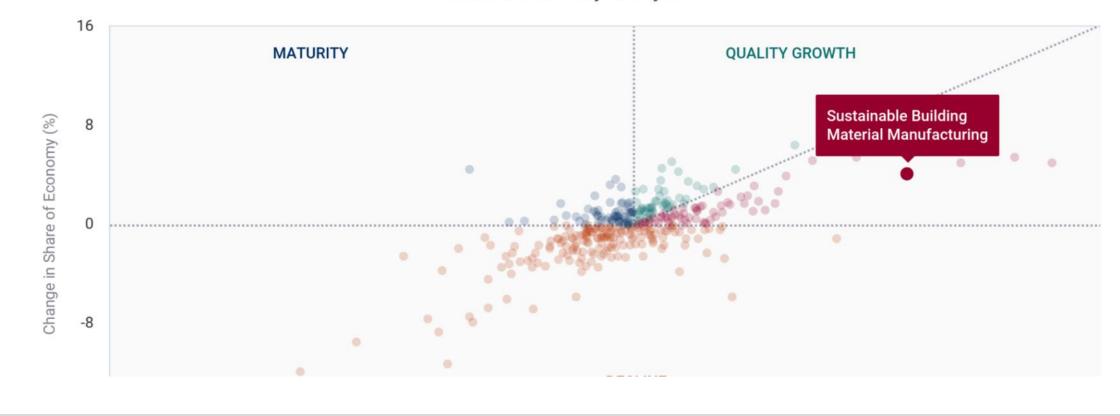
Demand from residential and commercial construction projects to produce LEED-certified buildings will drive the use of sustainable materials, as property owners, developers and regulators place a greater emphasis on cost savings, environmental protection and energy conservation.



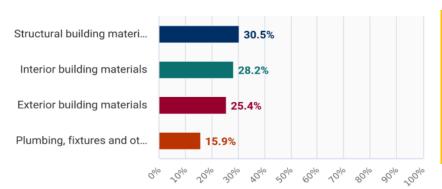
- Green building construction that is LEED-certified fuels demand for the industry
- The industry's robust level of growth over the past five years is also attributable to product improvements
- Sustainable building materials have continued to gain ground within the building materials market
- Sustainable building materials will continue to expand their share of the building materials market
- Continued improvements in household finances are anticipated to increase demand
- Competition from substitute products is expected to lose some of its edge

\$79.4bn

## Indicative Industry Life Cycle



## **Products and Services Segmentation**



The Sustainable Building Material Manufacturing industry is in growth stage of its life cycle.

Over the 10 years to 2025, industry value added (IVA), which measures the industry's contribution to the broader macroeconomy, is forecast to rise at an annualized rate of 5.5%, far outpacing GDP's projected annualized growth of 2.1% during the same 10-year period.

## **Industrial Bio Fiber**

## a global impact at a local level





## **Land Use**

- Land re-use and soil improvement
- Local source of raw materials
- **Educational Opportunity**
- Efficient land use
- New Jobs Farm











Carbon Offset Balance

- People Healthier
- **Local Materials**
- Jobs / Local Products
- New Governance model

#### **Planet**

- Sequester tons of CO<sub>2</sub>
- Less pollution
- No chemicals
- No landfill load

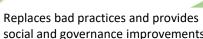
#### Prosperity

- Resilient
- Sustainable
- **New Industries**
- Hyper Local

## Urban

- Social and Community Value
- Clean and Regenerative Models
- New Jobs Retail and Commercial
- Multiple new products (fiber, hurd, seed)
- Bio fiber market supports multiple industries

social and governance improvements





## **Industrial Bio Fiber**

Supply Chain – (1 million blocks – full plant 5 million)



## Yearly

- Fiber Variety Genetics
- 7,000 metric tons of straw
- 1133 Hectares 2800 acres
- 2.5 metric tons per hectare
- Hurd is approx 55% of plant

Hurd

3,500 metric tons straw for hurd



## Yearly - Decortication

Capacity – 4 metric tons per hour 24,960 metric tons a year 25% - 30% Fiber

#### One line

7,000 metric tons

- → 3,500 metric tons of hurd
- → Fiber 2,100 Metric Tons



### **JBF Block Production**

- 1 million blocks
- 1 million sqft of construction
- \$25,000,000 Sales



## Fiber

\$ 800 metric ton \$ 1.680.000 Net Profit



Single Family

**Light Industrial** 



Multi-Family Mixed Use

## **Sustainable Development Goals – meets many SDGs**

## Farm – Agriculture

- Brown Field Mitigation
- Reduced Forestry
- Soil enhancement
  - fixes carbon
  - reduces nitrates
  - low chemical load
- added cash crop better yields

## Factory – Hub of the Supply Chain

- Create Circular Economy
- Jobs (60 \$3M in Salary)
- Saving Transportation Costs
- Supports Rail, Road and Water
- No demand on precious resources
- Recycles CO2 Gases
- Sequesters 10+ tons per 2000 blocks

## Real Estate

- · Best in class building system
- < 1% Waste, No Landfill</li>
- Lower operating costs
- Increased asset value (ESG)
- Increased Cap-Rate
- Lower Insurance
- Simple and Safe



#### ESG Factors that can be credited

#### **Environmental**

- · Biodiversity and habitat
- Carbon Footprint (reduction)
- Land contamination
- Energy consumption
- Greenhouse gas emissions
- Indoor quality (VOCs)
- Location and transportation
- Construction & Materials
- Resilience to Environmental hazards
- Renewable energy
- Sustainable procurement
- Waste management
- Water consumption
- Circular Economics
- Hyper Local and Resilient

#### Social

- Health and safety
- Inclusion and diversity
- Labour standards and working conditions
- Social enterprise partnering

#### Governance

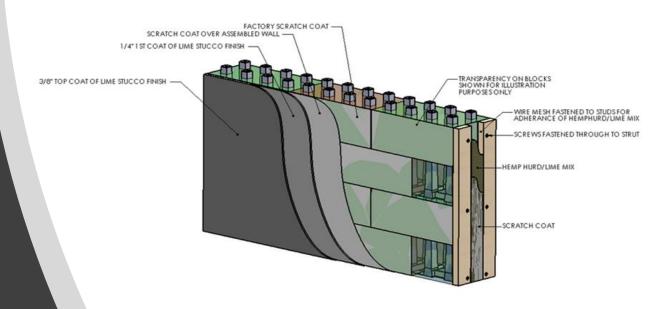
- Hyperlocal
- Circular Economy
- Non manipulative Business Practices
- Small Business friendly
- ESG in Operations
- Social Equity in Leasing
- Purchasing and Contracting



## Innovative Building System

- Internal composite frames provide structural integrity creating a superstructure for the building – stronger than typical steel
- Reduces CO2 from crop to block sequesters up to 12 tons of CO2 per average 2,000 sq-ft and continues through its life
- Supports long spans using post-tensioning with increased seismic capabilities
- Quick assembly reduces labor no waste
- Best in class to prevent mold, fire, vermin and rot
- Reduced Operating Costs Effective R<sub>32</sub>+
- Easy to finish with lime plaster, siding, stone, brick cladding, etc.
- Pre-engineered with Integrated electrical conduits
- Raw materials available anywhere (bio fiber, lime)

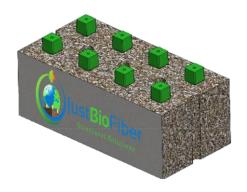


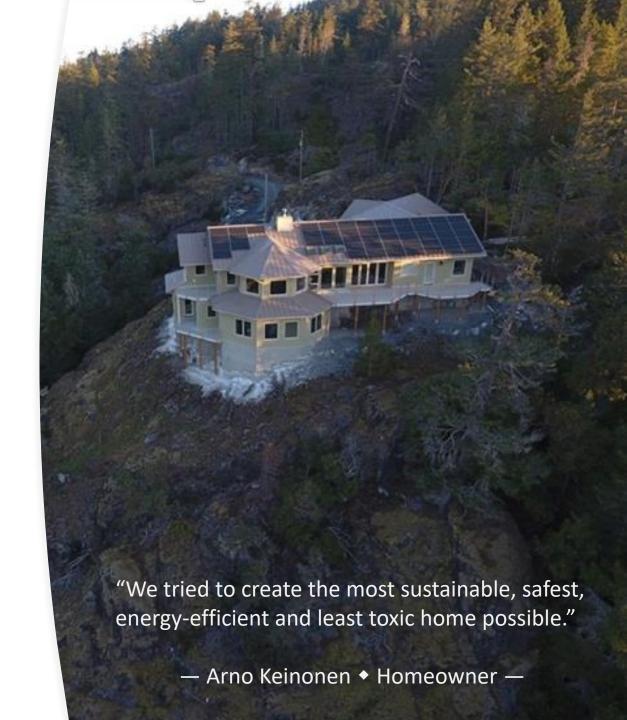


## JBF – Harmless Home

Incredibly improved comfort level with naturally regulating humidity, temperature, and dampened sound.

- The walls are built using JBF block made of Bio Fiber, lime and water, creating a low maintenance, durable building envelope that does not emit VOCs.
- The effective R32+ value reduces energy cost.
- The JBF building system has a 2-hour fire rating.
- The wall assemblies can breathe and are mold, mildew, insect and rodent resistant.
- The blocks sequester over 10+ tons of CO<sub>2</sub> and continue to absorb CO<sub>2</sub> over its lifetime.







# INVESTOR INFORMATION

SALES - TEAM - PATENTS - INVESTMENT

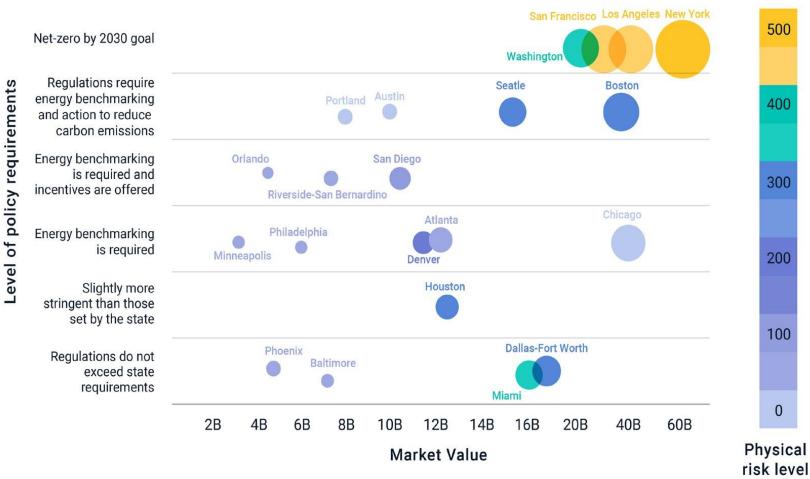
## Re-valuing real estate: investing in the eye of the hurricane – Now is the time!



Wildfires, storms, floods, droughts, heat waves.... Just as real estate investors and managers begin to grapple with what climate change might do to their assets physically, now they may also have to contend with accelerating regulation. Location matters in real estate, and vast portions of the global property stock are in cities and regions marching towards zero-carbon building standards.

In 2020, greening the property portfolio will move from a nice-to-have reputation booster to an imperative in the face of a looming "brown discount" if real estate investors don't kickstart their journey to zero carbon.

Exposure to regulations and climate hazards, by real estate market



The chart shows the top 21 U.S. cities represented in the MSCI Global Property Index (those with at least 60 geocoded assets covered in the index), classified by the type of regulatory requirements adopted by each and the level of physical risk to which the cities are exposed. The following physical risks were assessed: hurricanes, water stress, and wildfire.

Sources: MSCI Real Estate, MSCI ESG Research LLC, American Council for Energy-Efficient Economy, World Resources Institute (WRI), U.S. Department of Agriculture, U.S. Forest Service, MunichRe. Data as of Dec. 31, 2018.

## **Just Bio Fiber Product Timeline**

2020

Finish Optimization and Factory Design Factory design, pricing and financing complete.

2021

**Deliver 20+ Pilot Projects globally**Ramp Airdrie Plant and Begin Market
Rollout and full scale plant.

2022

## **Scale Company**

Build Full Scale Factories in 3 Market Areas

2023 and beyond can have a global

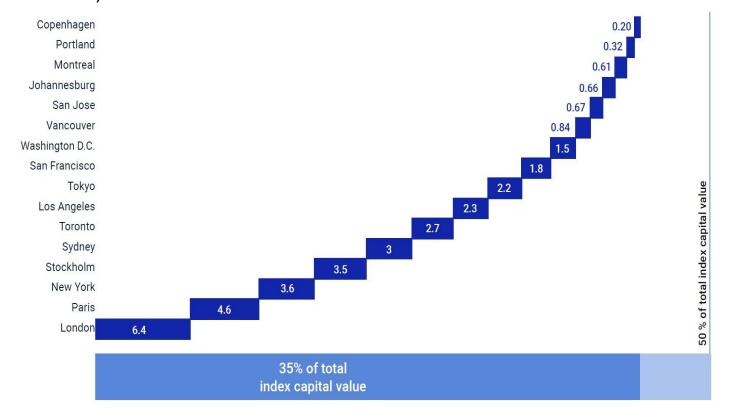
CO2 impact – Every 10 Factories
sequester over 240,000 tons of
CO<sub>2</sub> a year and offset even more
(timber, concrete, steel) emissions.

## Global Demand by Developers and Municipalities



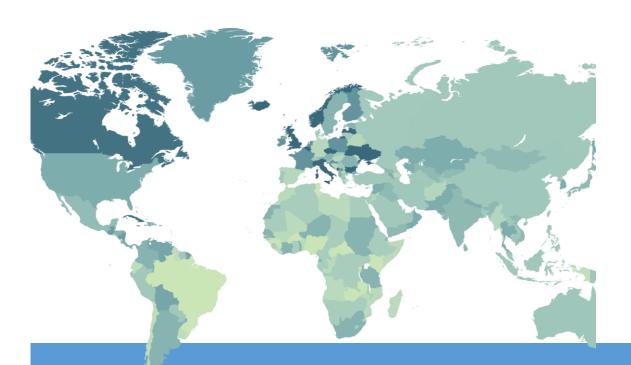
Nineteen cities globally have committed to achieve net-zero carbon emissions in new buildings by 2030, and for all existing buildings by 2050.

Together, these cities represent a total population of 130 million and approximately 35% — an estimated USD 622 billion — of the total capital value of all the properties in MSCI's Global Annual Property Index, as of Dec. 31, 2018.



## Domestic and International Sales Pipeline





Location	Model is extensible pilot plant	Addressable Immediate Market Size (annual)		
UK	Master Developer	\$10M		
Germany	Master Developers	Unlimited		
Spain	Master Developers	\$10M		
South Africa	J/V Reseller	\$25M		
Australia	J/V Reseller	\$25M		
Caribbean	J/V	\$25M		
Turkey	J/V	\$10M		
West EU	J/V	\$15M		
Canada, Alberta	Various	\$40M		
Canada, Ontario	J/V	\$25M		
Texas	J/V	\$25M		
Colorado	J/V	\$25M		
New York	J/V	\$100M		

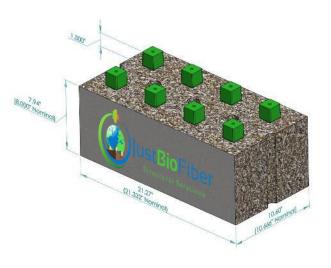
# Growth Strategy & Sales Pipeline

- JBF currently has a backlog of over 100 projects to operate at initial full capacity for the next 24 months and global market demand for many more factories.
- We have presented as a guest speaker or exhibited in USA, Canada, and China with invitations from USA, EU, and Japan. We have received millions of views of media coverage on social media and National television news.
- Our current target market for our eco building system are developers, general contractors and resellers domestically and global including global 2000 companies.
- We are pre-approved (engineered product) and our team is already working with engineers, architects and city planners who are recommending the system to the general contractors.

## **Intellectual Property**

Extensive IP Strategy and Approach (partial listing)





Load bearing interlocking structural blocks and tensioning system

US <u>US20170030069A1</u> William Radford Just Biofiber Corp.

WO EP US CN JP KR AU BR CA EA MX CA2899476A1 William Malcolm RADFORD William Malcolm RADFORD

Priority 2014-08-01 • Filed 2015-07-31 • Published 2016-02-01

A structural block tensioning system for contributing to the tension bearing attributes of a structure, the system comprising: a plurality of structural blocks, each structural block having opposed top and bottom surfaces, opposed side surfaces and opposed end surfaces; a

Unibody structural frame for an interlocking structural block, an interlocking ...

US <u>US20200109557A1</u> William Malcolm RADFORD Just Biofiber Structural Solutions Corp.

Priority 2018-10-03 • Filed 2019-03-22 • Published 2020-04-09

A unibody structural frame for an interlocking structural block, an interlocking structural block, and a system of interlocking structural blocks useful for the manufacture of structures, columns, and beams.

Interlocking structural block reinforcement means and modular building system WO EP US CN JP KR AU BR CA EA MX US20160194874A1 Mac Radford Just Biofiber Corp.

Priority 2015-01-07 • Filed 2016-01-07 • Published 2016-07-07

Construction materials intended for use as structural elements in the construction of buildings and civil engineering structures. Such elements can include reinforcement means that can increase the structural integrity of a structural block. Methods for manufacturing the reinforcement means, ...



## Executive Team with proven track record



#### Mac Radford - Founder & Inventor



Veteran entrepreneur with over 40 years experience in land development and construction projects. Mac has owned and operated an engineering firm for more than a decade and worked with other building systems to develop and improve manufactured wall panel assemblies. Multiple patent holder and inventor.

## Terry Radford – Co-Founder and President



Terry has over 35 years of business experience in the technology industry. He has founded and managed five technology companies including a national computer network products distribution company and a networks communications software company sold to a US defense contractor.

Bill Reed, AIA LEED - Advisor



Bill is an internationally recognized practitioner, lecturer, and leading authority in sustainability and regenerative planning, design and implementation. Bill is a principal in Integrative Design, Inc. and Regenesis – organizations working to lift green building and community planning into full integration and evolution with living systems.

Gerard Bruha, P.Eng. – EVP Manufacturing



Experienced Production and Chief Process Engineer with EPC oil and gas technical and management roles. Accomplished in all aspects of project development including studies, FEED packages and detailed designs of tank farms, terminals, SAGD well pads/central processing facilities, and refining. Skilled in plant commissioning, startup, and test run activities.

## Dave Ladouceur, Chief Operating Officer – Serial Entrepreneur



Dave is an award-winning Operating Executive that has designed smart cities and has been commercializing technology for 30 years including rockets, spacecraft, compilers, protocols, web, mobile and SAAS and PAAS products, global supply chain and manufacturing with many successful exits, his latest endeavor is a Regenerative City Platform Fund.

## Abdelsamie Elmenshawi, P.Eng, PhD, VP Structural Engineering



Samie is a proven leader in the development of complex engineering systems. An award-winning designer, educator and leader in structural design and analysis spanning a multitude of international projects in commercial, residential and industrial building construction. Lead FEED studies, testing and certification across international design codes.

## **Completed Projects**





## JustBioFiber in the News









**Construction Process** 

**Finish Product** 

**Future Development** 

Global News Canada ▶

Global News Canada ►

Evening News





Historical

**Evaluation** 

**Sustainability** 

New York Times ▶

Local News

<u>JustBioFiber Introduction</u> ▶

## Next Generation Product – Compared



20

JBF Building System		Typical Wood-Frame Construct	ion
\$25 USD/sq. ft. installed (excluding finishes)		- \$25 USD/sq. ft. installed (excluding	finishes)
Effective R32 (U 0.03125) insulation	✓	R19 insulation	
Very small CO2 footprint	✓	CO2 footprint	
Time to build exterior walls – a typical house: 10 days	✓	Time to build exterior walls – a typic	cal house: 60 days
Pre-Engineered – no mistakes	✓	Not Pre-Engineered	
Bulletproof	✓	Not Bulletproof	
2-Hour Fire Rating	✓	30 – 45 Minute Fire Rating	
Resistant against mold, pests and insects	✓	No resistance to mold, pests or inse	cts
Expected lifespan of building: 100+ Years	✓	Expected lifespan of building: 40 Ye	ars
Very Low Operating Cost Additional Disposable income available Very Low operating CO2 emissions	✓	High Operating Cost No additional disposable income High operating CO2 emissions	
Multiple Patents Pending	✓		

Quantity Cost Surveyor Report: "It should be noted that even though the JBF BioFiber SSR Block System is amongst the cheapest methods of construction, it is also likely to soon be recognized as the "best in class", (or the highest performing building envelope system) in use today.

QSSI, 2017

# JustBioFiber Specifications

## World Class Performance



Test Standard	Test Name	Company	Status	Schedule	Result	Result Interpretation
ASTM E119 / ULC-S101	Fire Endurance (2h) 11'6" L X 8' H	Intertek	Complete	2018-0626	Loading 85,000 Lbs. 7,328 Lbs. Ft. 4 story load bearing walls	Best in Class – Excellent Result: Pass - 2 Hour Fire Rating
ULC-S102	Flame Spread / Smoke Development	Intertek	Complete	2018-0625	No Flame Spread, No Smoke	Best in Class – Excellent Result: No Flame, No Smoke, No VOCs
ULC-S135-04	Caloric Content (Cone Calorimeter)	Exova	Complete	2017-0306	Heat Release 1MJ/m <sup>2</sup> Extinction Area 0.2m <sup>2</sup>	Best in Class – Excellent Result: Non - Combustible Material, No VOCs
ASTM C426	Linear shrinkage	NRC- CCMC	Complete	2017-0120	Shrinkage (0.026%)	Pass – Best in Class
ASTM E72-15 Section 11	Structural Transverse (Bending)	Intertek	Complete	2018-0806	289 Lbs./Sq. Ft.	Excellent Result - 293 Mph Wind Shear
ASTM E72-15 Section 9	Structural Axial (Compressive)	Intertek	Complete	2018-0726	95,667 Lbs.	Excellent Result - "6 Stories Minimum – can be engineered for 11-12 stories"
ASTM E72-15 Section 14	Racking	Intertek	Complete	2018-0726	15,048 Lbs. Tensile Strength 65MPa	Exceptional Results
WUFI report	Hygrothermal Performance	JSS	Complete	2016-1129	Mold Growth Index 0-2.9 (Most results 0)	Good Result: No Mold Conditions, No Vapor Retarder/barrier required
ASTM C1046-95 ASTM C115595	In-Situ R-Value (Upgraded Test "G")	SMT	Complete	2018-0914	R value varies by thermal coupling placements R32 – R40 (U 0.03125)	Best in Class - better R value on cold/unshaded sides of building or direct sun.
ASTM E2357	Air Leakage of Air Barrier Assemblies (Upgraded Test "H")	Intertek	Complete	2018-0914	0.002L/s·M <sup>2</sup> Infiltration, 0.002L/s·M <sup>2</sup> Exfiltration at 25-300 Pa Deflection 0.340.50mm	Perfect Result: Q10>0.20kPa No air leakage, fracture, delamination, or loosening of fasteners, better than 8 Mil. Poly
ASTM C423	Sound Absorption & Coefficient	MEANU U of A	Complete	2018-1003	NRC .55 (db)	Good Result
ASTM E423	Sound Transmission Loss	MEANU U of A	Complete	2018-1003	STC 42 (db)	Good Result
EN 722-22	Durability Freeze Thaw	Lucideon UK	Complete	2019-0522	F1 - moderate exposure	Good Result - No change for 50 cycle – 2 hour soak Hairline crack in surface of lime stucco after 100 cycles will self heal by dissolution and recrystallization of soluble salts

Just BioFiber Environmental Goals

Making one tonne of steel emits 1.46 tonnes of  $CO_2$  and 198kg of  $CO_2$  is emitted make one tonne of reinforced concrete. One square metre of timber framed, bio fiber-lime wall (weighing 120kg), after allowing for the energy cost of transporting and assembling the materials actually stores 35.5kg of  $CO_2$ .

source: the guardian - sustainable construction

UK HM Government - a Low Carbon Construction - Report

### **Land Use:**

Bio Fiber can produce 250% more fiber than cotton and 600% more fiber than flax using the same amount of land and grows in four months instead of decades and takes less than 1/10 the energy to process than trees and is beneficial to the soil.

## JBF Sequestered CO<sub>2</sub>:

- 12 tons of CO<sub>2</sub> per 2000 blocks
- 10,000,000 blocks per year removes 600,000 tons of CO<sub>2</sub>

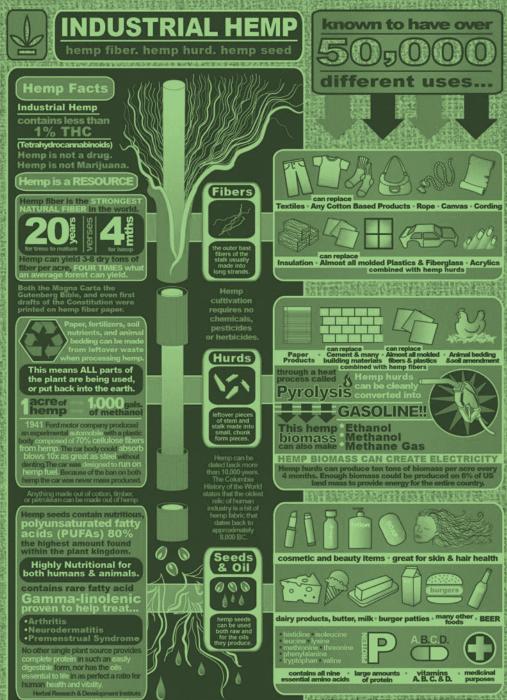
### Waste and Recycle (unheard of in construction today):

- Less than 1 % job waste
- Zero Construction Landfill
- Recycle 100% of all products Bio Fiber / Lime used for Soil Augmentation and recycled frames

### **Coming Soon:**

- Bio-Recycle all products (100%)
- Transition to Soy based foam block





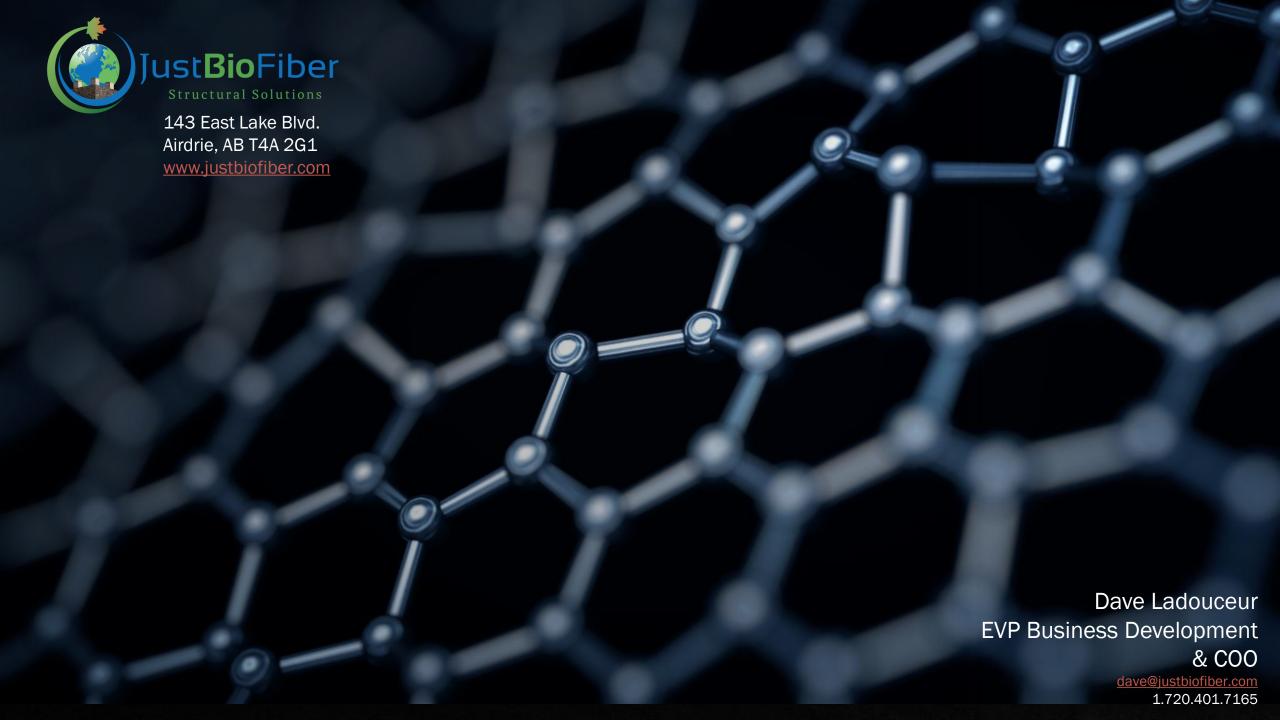
Industrial Bio Fiber approved in the U.S. – Bio Fiber based products are a modern model for regenerative development and global CO<sub>2</sub> reduction





Just BioFiber has combined centuries old technology with modern composite materials to create a healthy sustainable ultra efficient building system that reduces CO<sub>2</sub>

**Video Introduction** 



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By their nature, forward-looking statements and financial projections involve numerous assumptions, known and unknown risks and uncertainties, both general and specific, that contribute to the possibility that the forward-looking information and financial projections will not occur, which may cause the Company's actual performance and financial results in future periods to differ materially from any estimates or projections of future performance or results expressed or implied by such forward-looking statements and financial projections. Important factors that could cause actual results to differ materially from expectations include, but are not limited to: business, economic and capital market conditions; the regulated industry in which the Company carries on business; current or future laws or regulations and new interpretations of existing laws or regulations; legal and regulatory requirements; market conditions and the demand and pricing for our products; our relationships with our customers, developers and business partners; our ability to successfully define, design and release new products in a timely manner that meet our customers' needs; our ability to attract, retain and motivate qualified personnel; competition in our industry; competition; technology or production failures; failure of counterparties to perform their contractual obligations; systems or service disruptions or failures; ability to obtain additional financing on reasonable terms or at all; our ability to manage risks inherent in foreign operations; litigation costs and outcomes; our ability to successfully maintain and enforce our intellectual property rights and defend third party claims of infringement of their intellectual property rights; our ability to manage foreign exchange risk and working capital; and our ability to manage our growth. Readers are cautioned that this list of factors should not be construed as exhaustive.

The forward-looking statements and any projections contained in this presentation are expressly qualified by