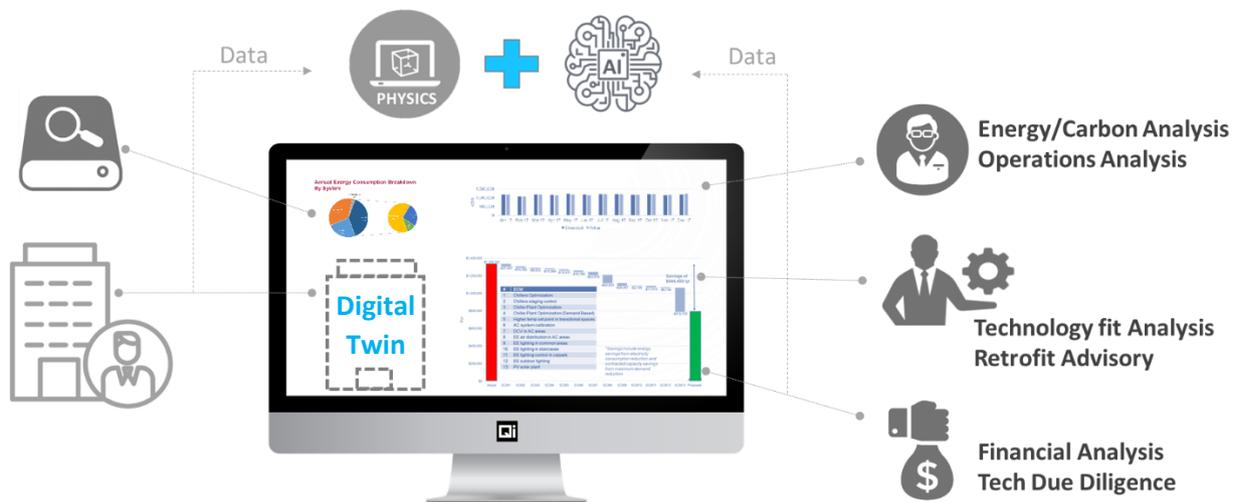


Green Assessment-as-a-Service

for
**Building
Owners/Managers**

What is BtrLyf?

BtrLyf (pronounced as 'better life') is a green 'assessment-as-a-service' platform that adds unprecedented value to assessment, analysis, and diagnostics of building performance through digitalization. The AI-powered building simulation engine of BtrLyf has been developed through several years of Research & Development by Qi Square, a spin-off company of the Nanyang technological University (NTU), Singapore. The platform aggregates multiple sources of building data, including open-source information, design data, standards, API linked data from third party providers, and user entered data to create useful 'digital assets' or 'digital twins'. This data is then processed through physics-based simulation and machine-learning based analytics engines to deliver building specific as well as city-wide aggregate insights to improve performance of buildings. BtrLyf can be accessed by the building industry stakeholders through an easy-to-use and convenient cloud platform that is able to deliver instant assessment and solutions-matching at a very low subscription cost for any user. The resultant impact includes reduced transaction time, marketing costs, sales cycles, investment risk and improved productivity of business process by up to 10x. In short, *BtrLyf is a green building market platform that helps accelerate sustainable development through digitalisation.*



What problems does it solve?

Buildings consume 40% of energy and contribute to 30% of carbon emissions globally. Building Owners can save 30% to 40% in operating costs through proven green retrofit measures with an average IRR > 25%. However, building industry players do not have the tools to easily identify and quantify energy saving opportunities, evaluate the latest technological solutions and access financing options. The lack of effective data accessibility and exchange inhibits the growth of the industry. This in turn severely prohibits timely deployment of successful decarbonization strategies that are urgently required to mitigate and limit climate change and global warming impacts.

Value Proposition for the Building Industry

Btrlyf gets the industry to work together on green building assessment with better data exchange for enhanced productivity and continuous improvements. In effect, it can provide a consistent and systematic data access for the

industry stakeholders by creating a common data environment of asset information, design standards, operational and technology parameters, as well as financial information. This information can be securely and yet easily accessed by the relevant stakeholders of a building performance improvement project or at an aggregate level by industry stakeholders in general. In effect it creates a 'virtual working/meeting table' for multi-faceted green assessment.



The digitalisation of building and technology datasets in BtrLyf, helps to achieve the following:

- i. Eliminates the need for expensive middlepersons for effective deal execution
- ii. Allows for Do-it-Yourself technical analysis without the need for technical skills
- iii. Prevents duplication of efforts that are common in the industry due to lack of relevant data
- iv. Avoids any travel or reduces physical touchpoints by providing secure remote digital access
- v. Provides low-cost and instant assessment performance assessment and solution fit analysis
- vi. Offers continuous performance upgrade and business development opportunities
- vii. Provides a technically sound, validated, and neutral green assessment
- viii. Takes advantage of open-source data and connected data from 3rd party APIs
- ix. Integrates with different data sources and conducts a comprehensive assessment
- x. Does not require any special equipment or meters installation, just an internet connected device

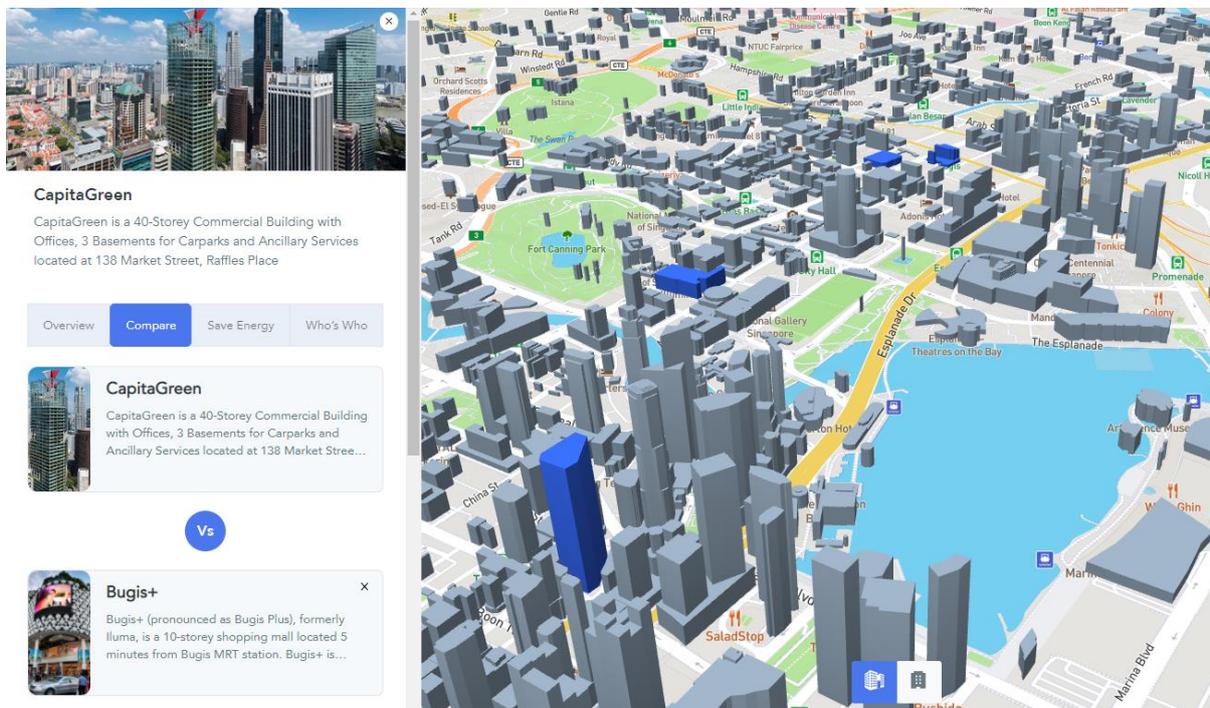
Features & Benefits for Building Owners/Managers

A building property owner/manager would look out for and receive several proposals to improve performance of their buildings. The key question to be first answered is how the particular solution fits the specific building and what is the performance improvement achieved. The other question is whether this was done comprehensively and was it a neutral assessment with the best interest of the building being considered. Or in other words, how efficient and effective was the qualification and quantification of performance improvement options. The management of energy data and information, utility bills, energy savings projects, and determination of actual savings and ROI is a time consuming, complex, and confusing task across any size portfolio of buildings.

Often times, building owner/managers spend too much time in doing the initial assessment or end up hiring expensive resources, just to get a preliminary evaluation. Also, whenever there is a new request or assessor on board, the assessment has to start from the scratch. The BtrLyf platform helps by simplifying green assessment by creating digital assets or digital twin of buildings and objectively evaluating their performance by connecting them to the related opportunities seamlessly and continuously.

1. Enterprise Grade Digital Assets of Buildings

The platform standardizes the building data of the portfolio buildings and their overview information with possibility of users to search, compare and later simulate energy savings in the buildings. This can be also useful to invite partners, potential solution providers and experts to do assessment of buildings and suggest performance improvements. It is also a powerful visualization tool to review all buildings consistently in a single place and review performance metrics as well as integrate live data from authenticated APIs. It can also act as a central repository for building models and performance data that can then be easily accessed and allowed for public sharing on a case-to-case basis. BtrLyf thus provides an “enterprise grade” solution for tracking and managing sustainability in properties.



2. Open Innovation Platform for Continuous Improvement

BtrLyf can provide an open innovation platform based on concept of digital twins and AI for the entire property portfolio. With baseline building data made available, the platform will be an open innovation tool for experts and technology providers around the world to suggest building performance improvements. Such users will be able to register on the platform and put in their technology/solution details, which can then be matched with the building’s digital model and a simulation report can be instantly generated showing the energy savings resulting from the proposed solution and related return on investments that can be achieved. These instant reports will be accessible to the proposing solution providers as well as the building owner/manager staff, through secured login access.



CapitaGreen

CapitaGreen is a 40-Storey Commercial Building with Offices, 3 Basements for Carparks and Ancillary Services located at 138 Market Street, Raffles Place

< Back

Generate Report

Overview

Operational Data

Construction

Lighting

HVAC

Miscellaneous

Project Details

Building Type
Office

Built-up area (sq.m) (excl. parking area) *
92,000

Green Building Certification
Green Mark

Certification level
Platinum

Number of occupants *
9000

Show advanced options

Parking Area (sq.m)

Parking above ground
0

Parking below ground *
400

3. Low-Cost & Continuous Green Assessments

Instead of spending a lot of money on initial assessment and audit costs, building owners/managers can benefit from the 'AI-EDGAR' (AI Enhanced Digital Green Assessor) available on BtrLyf. EDGAR is an instant building performance estimator based on sourced and user added data. It delivers an "auto" generated and interactive advisory for improving the building performance by listing a mix of solutions that can be applied in short, medium, and long term. This can help sustainability managers to develop a roadmap to achieve the corporate social responsibility (CSR) and sustainability goals and targets. The assessment covers various improvement aspects of the building comprehensively and looks at for example both load reduction as well as equipment and system efficiency improvement opportunities. It also simulates options either individually or in tandem to achieve the best return on investment. BtrLyf supports building owners/managers at different stages of the sustainability journey as follows.

- *Discovery*: You don't know how your building uses energy and you would want to start doing so.
- *Exploratory*: Your building energy performance has been benchmarked through some external auditors or regulatory bodies and it's time to catchup with the rest of the industry.
- *Energy Audit*: Share some information about your building systems and operations to identify potential Energy Conservation Measures (ECMs).



CapitaGreen
138 Market Street, Singapore 048946

02-03-2021

Pending

23.54%
Savings Potential

5,422,261.92\$
Investment

7 Yrs
Simple Payback

Submit to Owner

Save

Manual Simulate

ATTRIBUTE	CURRENT VALUE	SUGGESTED VALUE	MORE DETAILS
Insulation	Solid Dense Concrete Blocks Plaster	Perlite Plastering	Connect to Technology Suppliers
Glazing	Double glazed plain	Tinted film - Tinted Blue	Connect to Technology Suppliers
Roof Coating	Dark Grey cement finish	Bright white finish	Connect to Technology Suppliers
Light Type	CFL	LED Basic	Connect to Technology Suppliers
Light Control	-	Occupancy sensor	Connect to Technology Suppliers
AC efficiency upgrade	6.10	7	Connect to Technology Suppliers
AC retrofit	-	VFD airside	Connect to Technology Suppliers
Lift Retrofit	-	Regenerative braking	Connect to Technology Suppliers
Renewable Energy KWp	0	164.29	Connect to Technology Suppliers

4. User Management and Access Control

Although BtrLyf is an open platform, it is designed with maximum security and data privacy in mind. Building owners/managers can invite only the relevant partners to work on their performance improvement projects along with them. They can also decide what data is to be shared openly and what data is to be kept confidential. The secure APIs can connect to further services only with appropriate authentications on both ends. Furthermore, by adding new partners to the platform and allowing them secure login access, the repetitive task of sharing data with multiple parties can be avoided altogether.

My Buildings
View List

My Account
Account Details

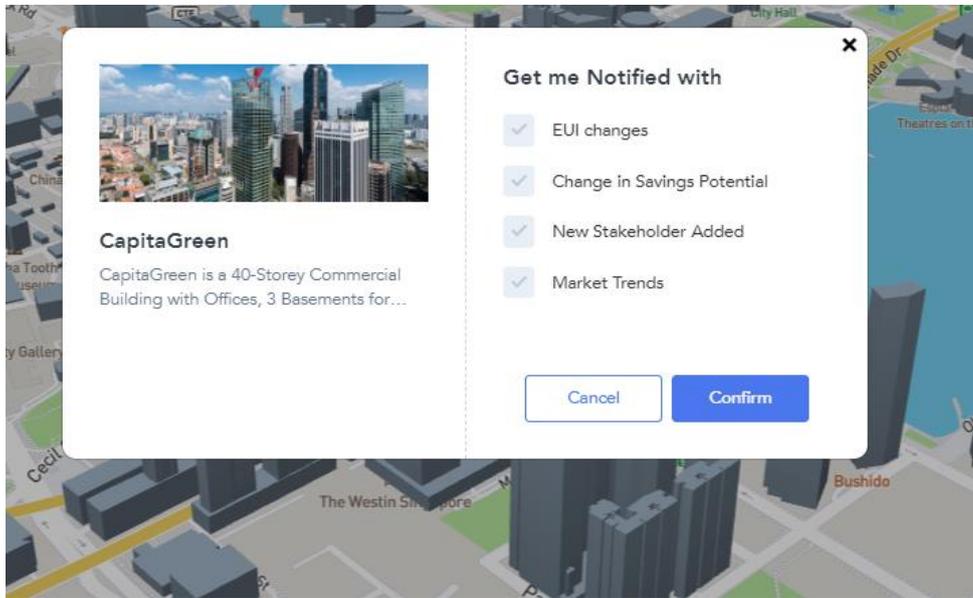
[Logout](#)

My Buildings
4 Buildings Total

	BUILDING NAME	GFA (SQ.M)	CLAIM TYPE	TYPE	STATUS
	Far East Flora	10,000	Consultant	Retail	Approved
	CapitaGreen	92,000	Consultant	Office	Approved
	Millenia Tower	20,000	Consultant	Mixed Development	Approved
	OCBC Centre	75,079	Consultant	Office	Approved

5. Updates, Notifications & Integrations

BtrLyf will continuously update its data on the platform to help the building owner/manager to the latest technologies for performance improvement. Notifications will be provided on an ongoing basis when changes take place on the platform. The user has an option to opt-out of notifications if necessary. BtrLyf will also continuously update itself to provide additional integration possibilities with 3rd party providers that the building might be already working with. This includes IoT providers, Proptech services, Building Information Modelling (BIM), building certifications, and other GIS and web data services.



BtrLyf provides seamless data integration across existing and new data-related services

