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MAKE IT
IN THE EMIRATES

FAÇADE CLEANING ROBOT FCR1.0

GENERAL SPECIFICATIONS

Weight	**100 kg**
Dimensions	**0.8×0.7×0.53 m**
Operational Ambient temperature	**Up to 50°C**
Operational Relative Humidity	**Up to 90% - Noncondensing**
Protection rating	**IP65**
Water Consumption	**0.3-2 litre/min**

* Basic weight, may vary depend on extensions.

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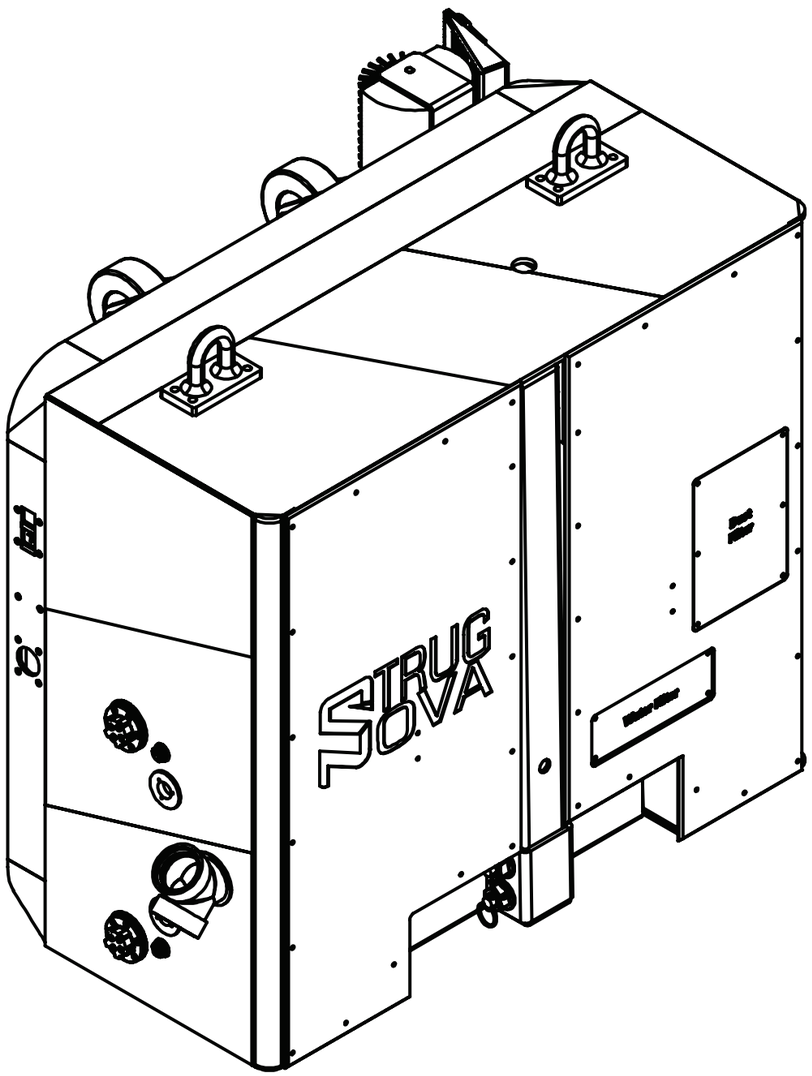
FCR1.0 is Here!



Meet FCR1.0, the future of towers facade cleaning. Powered by Artificial Intelligence technology, this robotic marvel brings a new level of efficiency and precision to the world of facade cleaning. Gone are the days of dangerous traditional cleaning; FCR1.0 utilizes smart algorithms to analyse and adapt to the unique features of your building, ensuring a thorough and ef f icient cleaning.

Equipped with recognition cameras and learning capabilities, FCR1.0 navigates complex surfaces with ease, identifying and targeting areas in need of attention. Say farewell to manual guesswork and hello to a smarter, safer, more effective solution. Embrace the fusion of artificial intelligence and cleanliness, as FCR1.0 revolutionizes the cleaning of tower facades – effortlessly and intelligently. Welcome to the era of AI-powered brilliance

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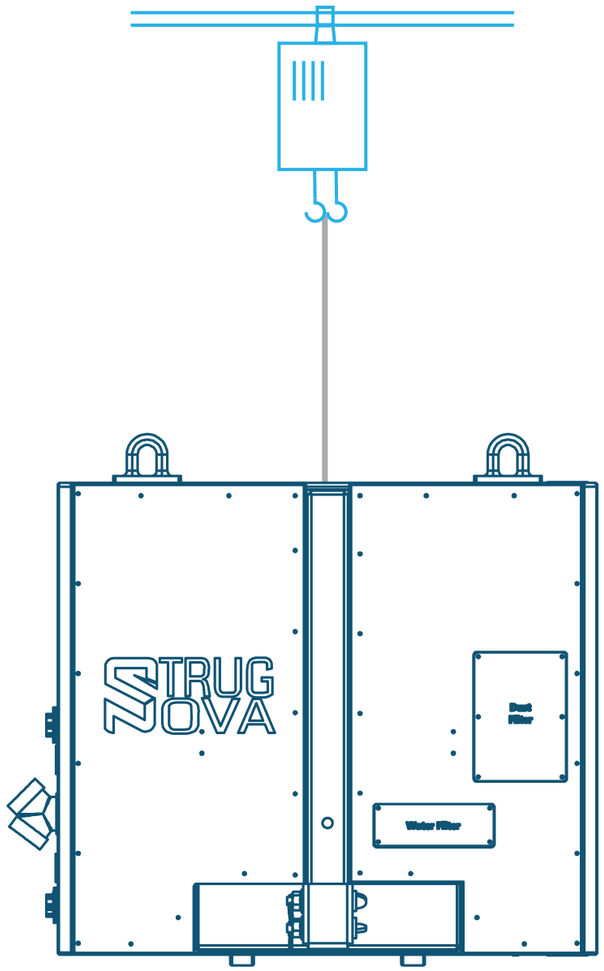
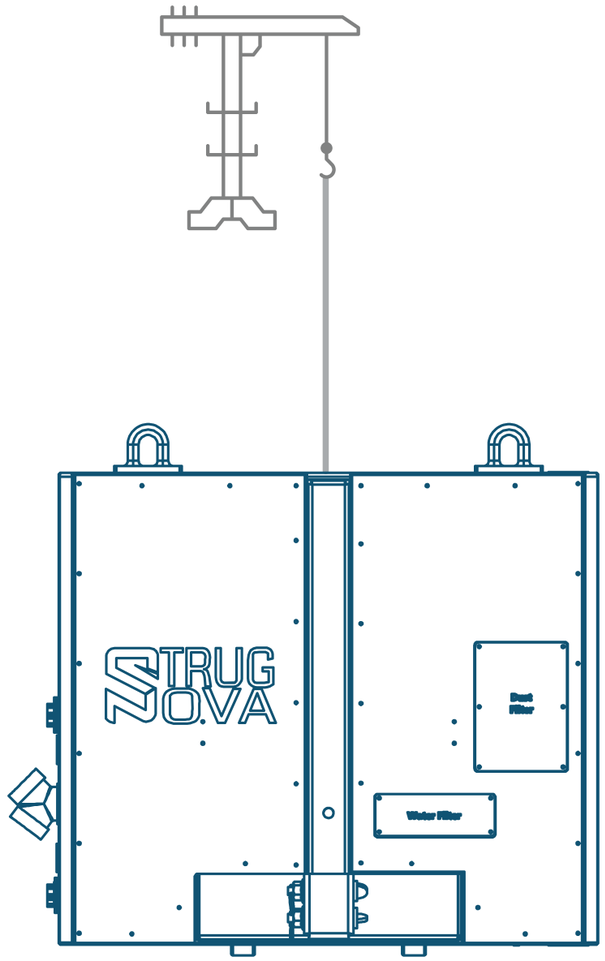
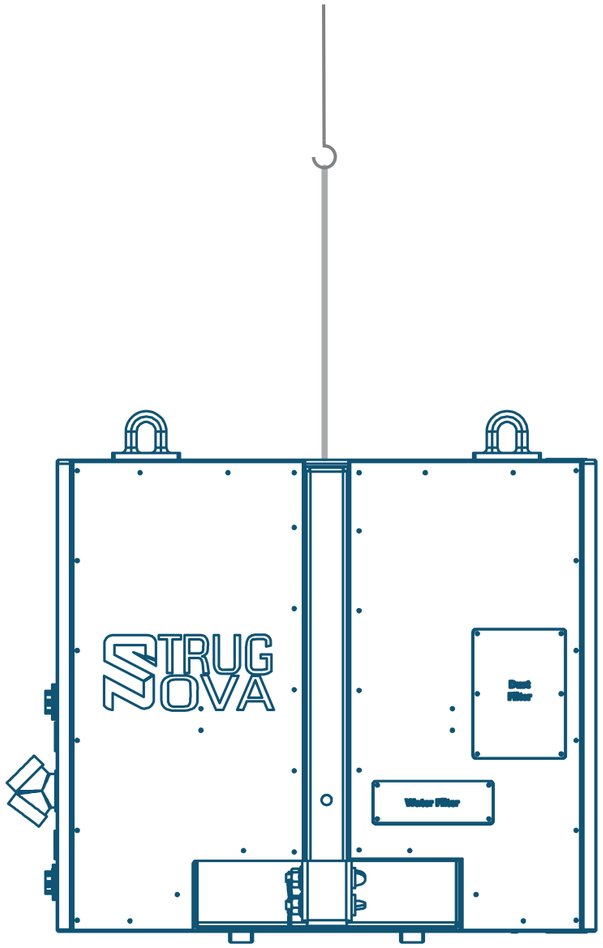


FCR1.0 CRANE



STABLE CRANE



CUSTOM SOLOUTION

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ROBOT CONTROL

Manual

FCR1.0 can be controlled wirelessly using the control
module (CM) in real-time. Camera feed and other parameters can be monitored in real time. CM is connected to the system using system local network (300-meter range) or using 5G infrastructure through secure channels.

Autonomous

FCR1.0 AI core allow for Autonomous operation. FCR1.0 can map towers using cameras & ladder sensors in order to generate the best navigation route for speed and power efficiency.

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LIFTING METHODS

BMU

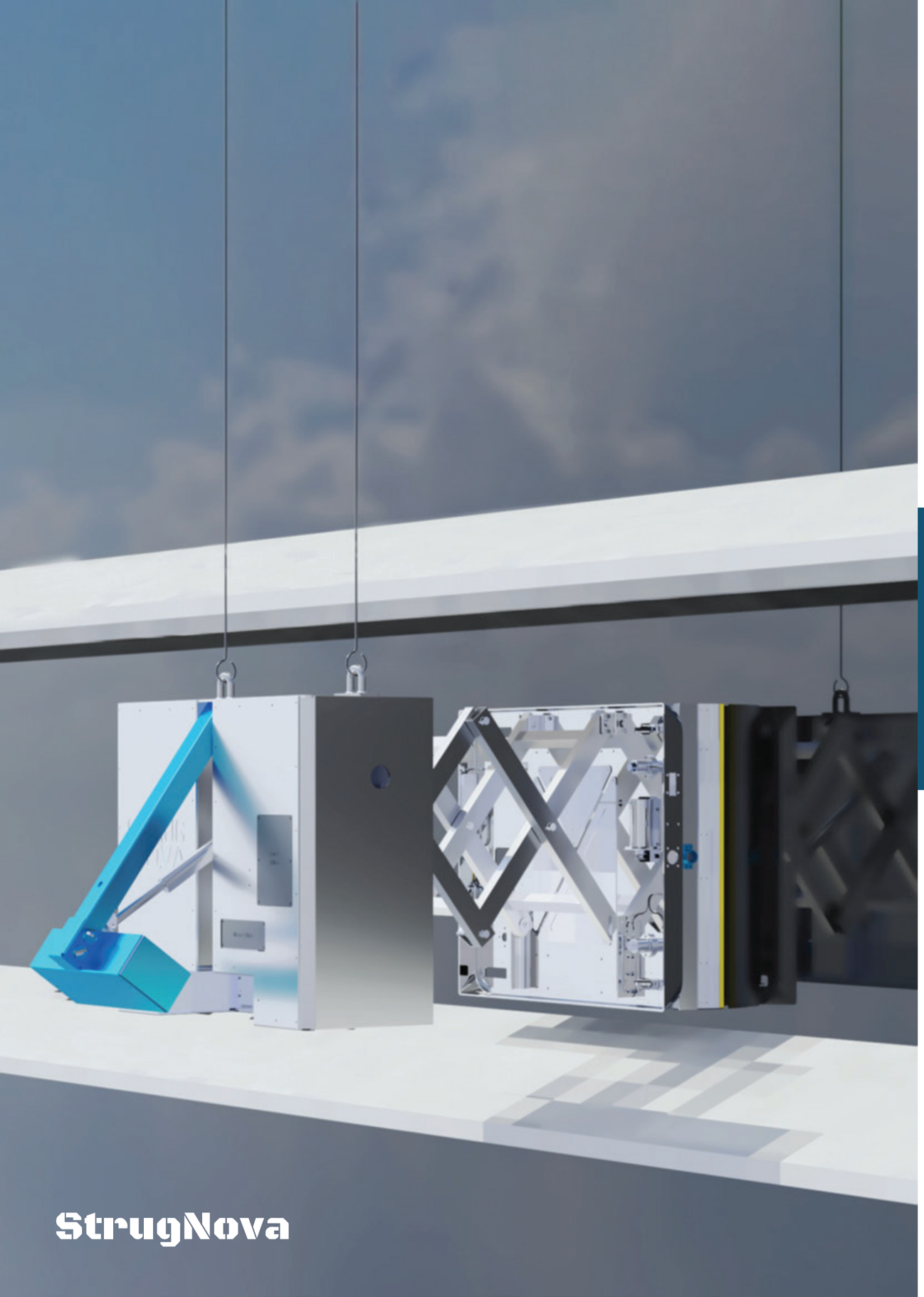
FCR1.0 system can be integrated to the already installed BMU by connecting the BMU to the crane control module that allows FCR1.0 to control the BMU wirelessly.

Monorail

FCR1.0 system can be integrated to the already installed building monorail by connecting the hoist to the crane control module that allows FCR1.0 to control the hoist wirelessly.

Custom Solution

For special towers where BMU and Monorails can't be used, a custom lifting mechanism can be designed.



CLEANING MODES

Vertical Mode

Clean Tower Façade Vertically.
For Towers with No obstacles.

300 m²/hour

Horizontal Mode

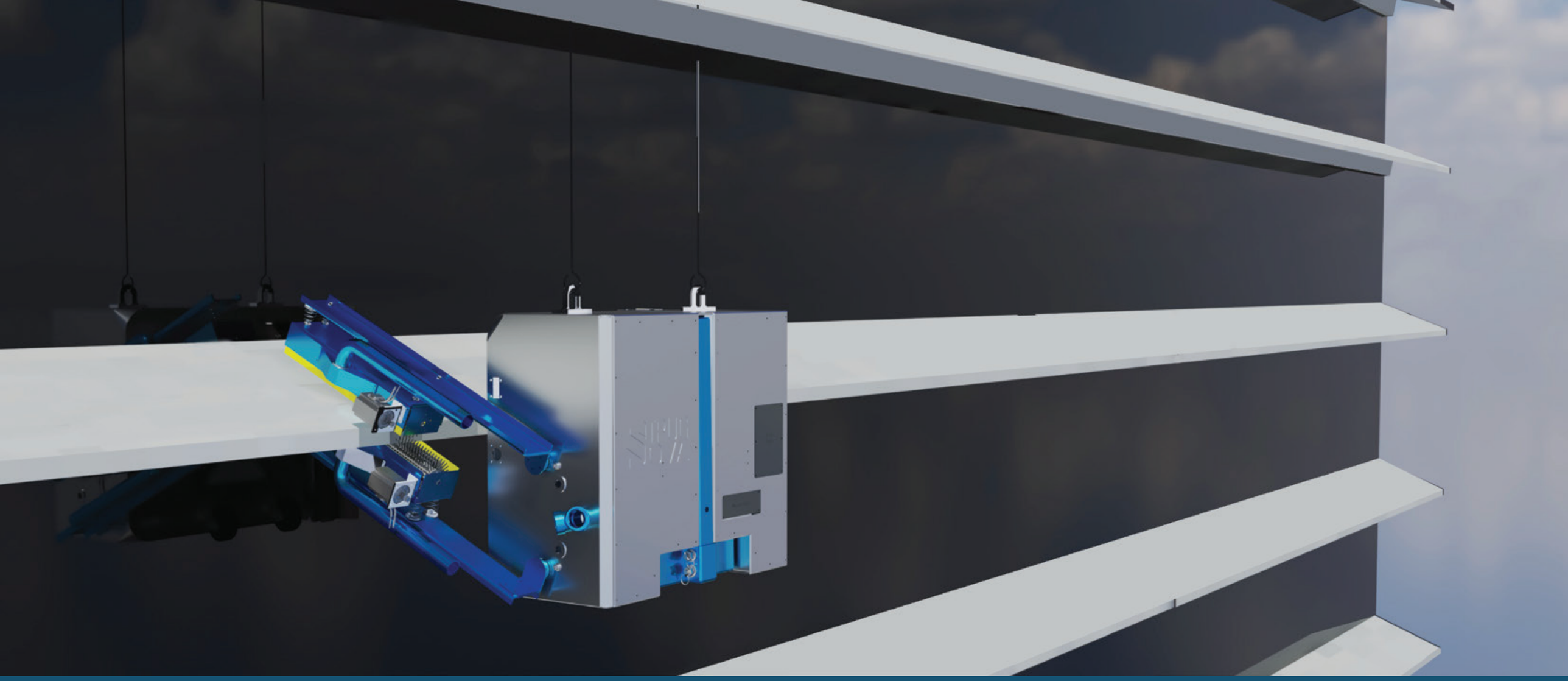
Clean Tower Façade Vertically.
For Towers with No obstacles.

240 m²/hour

Special Mode

Clean Tower Façade Vertically.
For Towers with No obstacles.

50-200 m²/hour



FCR1.0 is quipped with a modular cleaning system that extends the robot with a sunshade cleaning feature, this dynamiclly addaptive system is capable of dry cleaning various sunshade structure and shapes due to its flexabil design.

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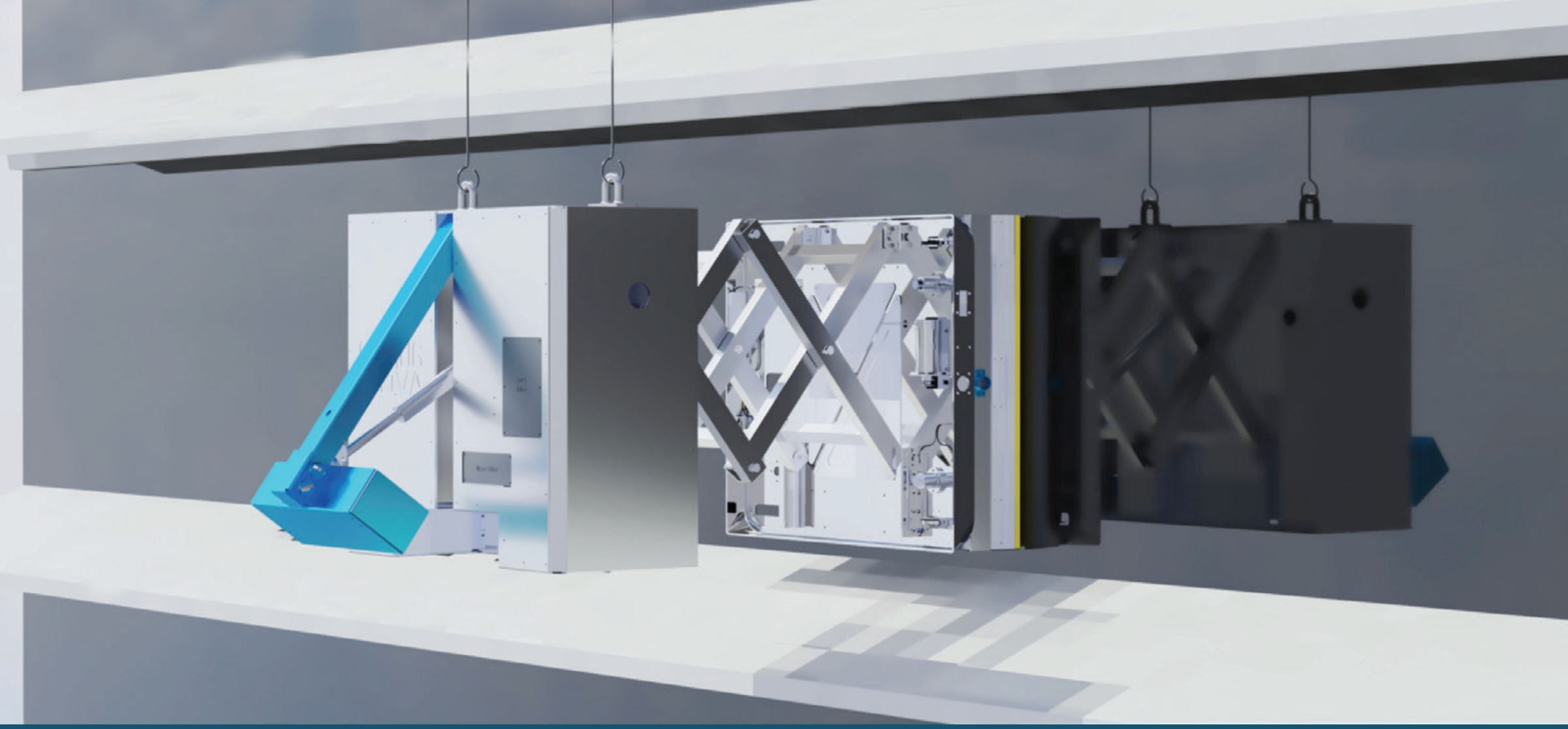

utlizing an electricaly actuated scissors mechanism the FCR 1.0 is capable of cleaning hard to reach places between sunshades with an extension range up to 800 mm

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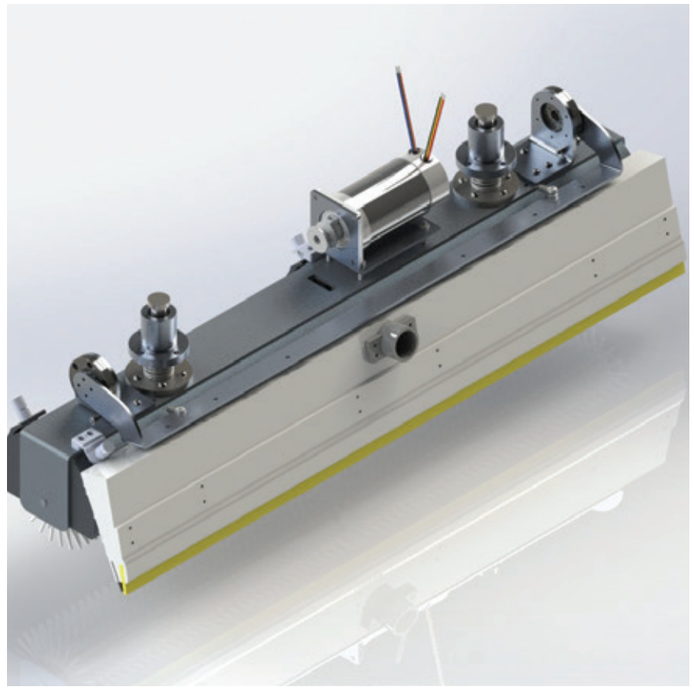

The cleaning module is the main part of the FCR's cleaning system and it consists of the following functions:

- Spraying
- Brushing
- Sweep and suction

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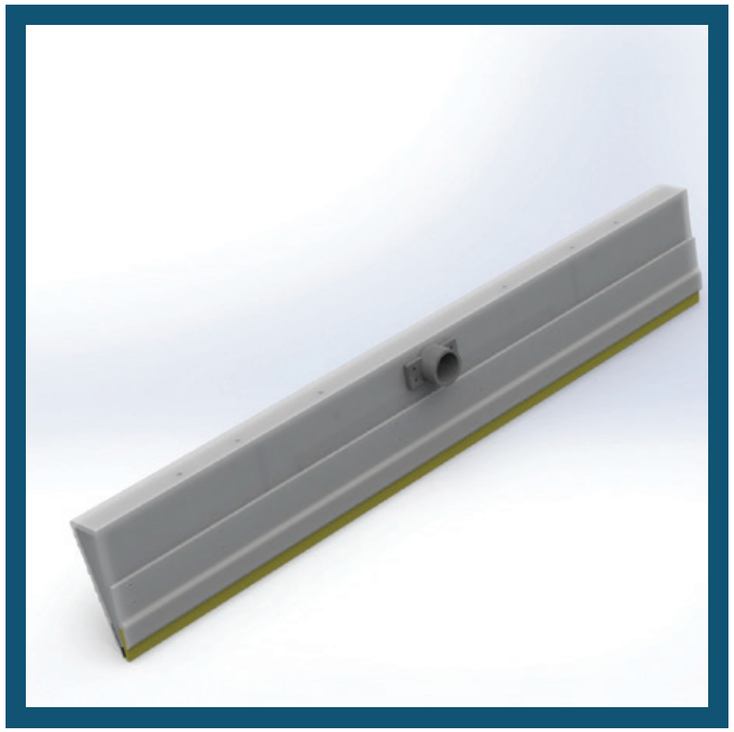


Introducing our latest innovation-a specialized squeegee crafted for dual-action cleaning by seamlessly combining swiping and suction functions. This cutting-edge tool ensures a crystal clear facade by efficiently removing dust during the process.

After the dirt is swiped and suctioned through the squeegee, it undergoes separation in a cyclone separator. This innovative device effectively distinguishes between dust and water, storing each partcle in its assigned tank.

Our cleaning system is modular, allowing for quick and easy adjustments. With just a single click, the cleaning system can be changed or modified to meet the specific requirements of each tower

PRE-WASH
Cleans dirt, dust, and construction debris, and boosts the effectiveness of the next phase of cleaning.

COMPLETE CLEANING
Cleans the dirt accumulated on the facade due to air pollution, dust, rain, and exhaust gases by using its nanotechnological solution.

POLISHING
An optional function, which prevents dust particles from sticking on the facade, thus providing a long-lasting cleaning.

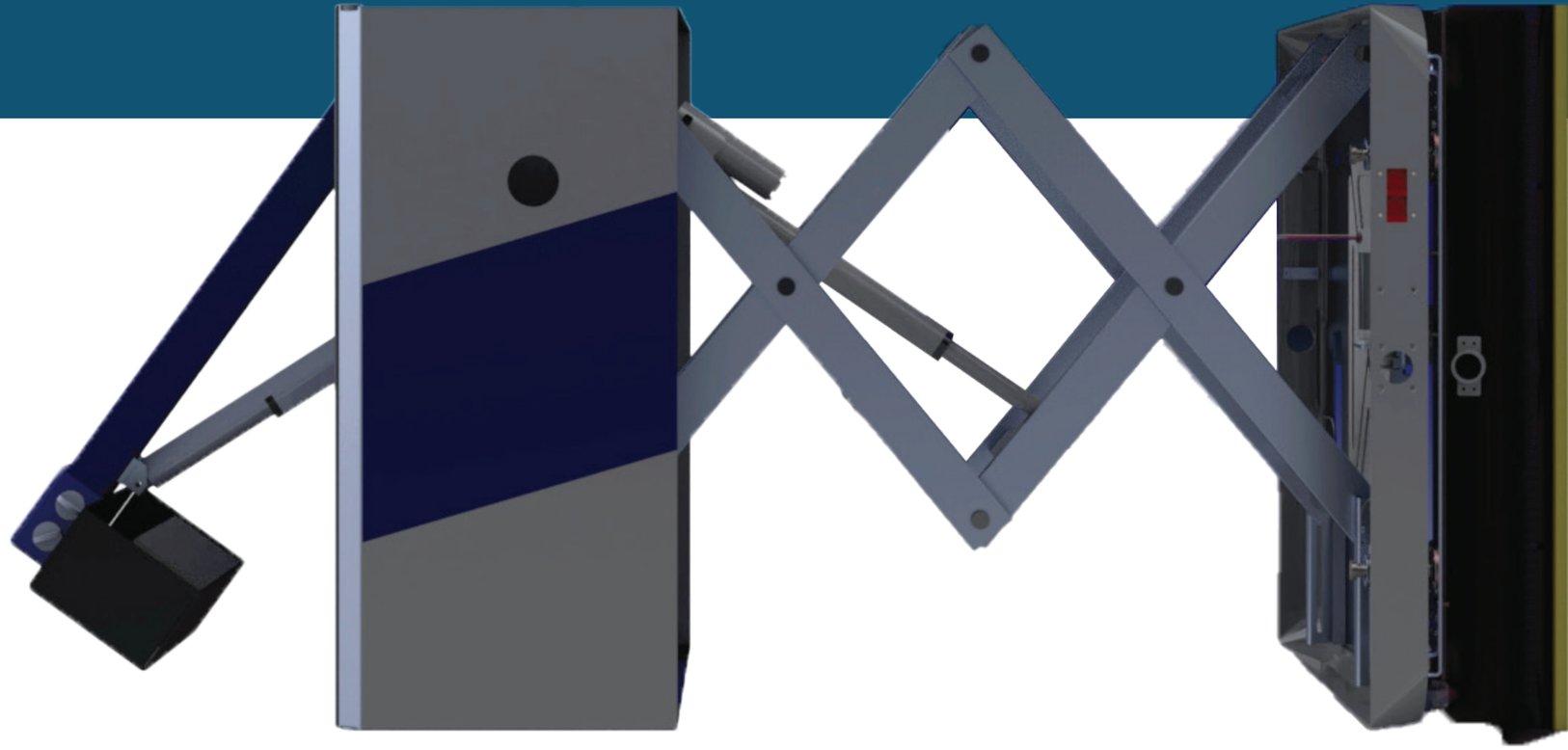
SMART SPRAYING SYSTEM
Regulates the amount of solution to be used, providing optimum efficiency.

DIFFERENT BRUSH OPTIONS
Depending on the surface materials and the amount of dirt accumulated on the facade, different brush types could be used to achieve perfect cleaning.

NANOTECHNOLOGICAL SOLUTION
Effectively cleans the dirt accumulated on the facade due to air pollution, dust, rain, and exhaust gases.

HORIZONTAL MOVEMENT
Façade Robot FCR1.0 auomatically moves from cleaned to dirty surfaces without any physical interference. Therefore it works efficiently and prevents time loss.

With its horizontal and vertical movement features, Façade Robot FCR1.0 continuously keeps cleaning.



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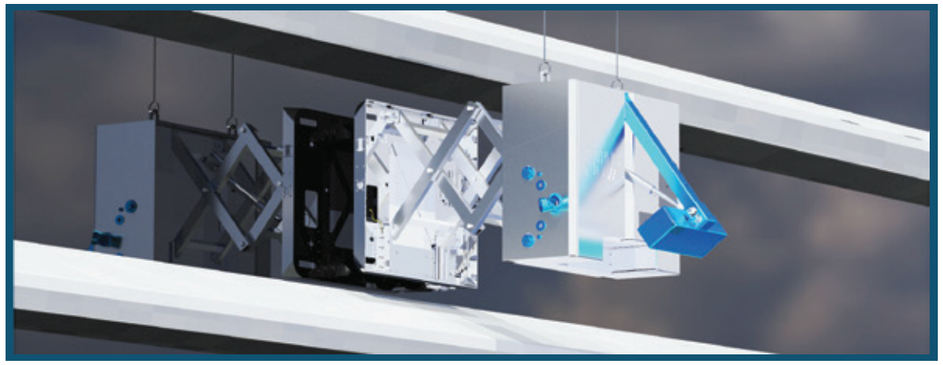
Discover the difference!

See how vastly superior Towercraft to traditional cleaning methods.

CRITERIA	FAÇADE ROBOT FCR1.0	TRADITIONAL METHODS
		
Cleaning expenses	Electricity and solution	Insurance, solution, safety equipment, cleaning equipment, occupational safety specialist
Maximum hour of work	24 hours	6/8 hours
Wind speed limit	40 Km/h	15 - 20 Km/h
Preparation time	Max 10 - 15 minutes	Max 120 - 180 minutes
Ability to clean the glass seams, sills, rubber and silicon gaskets	The smart robot reaches the spaces around sills, offering a deep cleaning	Traditional methods cannot reach the spaces around sills, causing building materials to deteriorate pre-maturely
Different facade cleaning functions	The smart robot has three modes: pre-was, complete cleaning, polishing	Traditional methods provide superficial cleaning through mobbing
Cleaning performance (per 60 minutes)	120 - 200 m^2 [1]	40 - 80 m^2 [2]
Maximum cleaning speed (m/min)	3 - 3.33 m / min	0.66 - 1.33 m / min
Solution consumption (per 60 minutes)	3 - 6 lt [3]	Unknown
Night shift	Yes. Thanks to its built-in lighting system, Façade Robot FCR1.0 can work 24/7	No
Environmental impact	The smart robot's nanotechnological cleaning solution is certified to be 100% environmentally and human-friendly	There are no set environmental standards.
Cleaning quality standard	The smart robot offers a standard quality of cleaning performance, irrespective of facade type or weather conditions	Traditional methods have no set quality standards. The performance of the work widely varies based on the experience of the cleaning crew, type of the facade, and weather conditions.

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[1] Depending on crane speed and tower exterior.complexity.

[2] The performance of traditional cleaning methods varies due to weather conditions and the cleaning crew's experience.

[3] Solution consumption could vary based on the type and the speed of the crane.

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