## COMPANY PROFILE INDIA



"The facade is a canvas for the architect to express his or her creativity. To communicate with the public, and to create a work of an that enriches The city."

/ ZAHA HADID



## WELCOME NOTE

## / BY SAM ROBINSON, Managing Director - *Hydro Building Systems South Asia Region*

"Aluminium fenestration solutions are a crucial aspect of modern architecture. Windows, doors and curtain walls, provide transparency, natural light, and ventilation whilst maintaining energy efficiency and weather resistance using aluminium offers several advantages for architects and designers. It is lightweight, durable, and easy to shape and form, allowing for flexibility in design and construction.

TECHNAL solutions can be used in a variety of architectural applications, from small-scale residential projects to large-scale commercial, high-rise and institutional buildings. They contribute highly to the overall energy efficiency of a building and help reduce heat loss and gain, thereby improving thermal comfort and reducing energy costs. Aluminium is also highly recyclable, making it an environmentally sustainable choice for building construction.

Architects and designers can create beautiful, sustainable, and energy-efficient buildings by incorporating aluminium fenestration systems into their designs.

At TECHNAL, we are proudly known for our early engagement in the design process, typically during the conceptual or preliminary design phase. This approach allows us to provide valuable input on the design and engineering of the product, based greatly on the joint expertise and experience of all the collaborators. By working closely with architects, builders, and fabricators, we made it possible to create stunning, high-performance systems that enhance the beauty, functionality and sustainability of every building we were involved in.

We ensure that the final product meets the requirements and expectations of all stakeholders and our involvement in the details help us identify potential design issues early in the process, which can save time and money in the long run. This can help optimize the design for cost, manufacturability, and overall performance which leads to a better-designed product, improved supply chain efficiency, and ultimately, higher customer satisfaction.





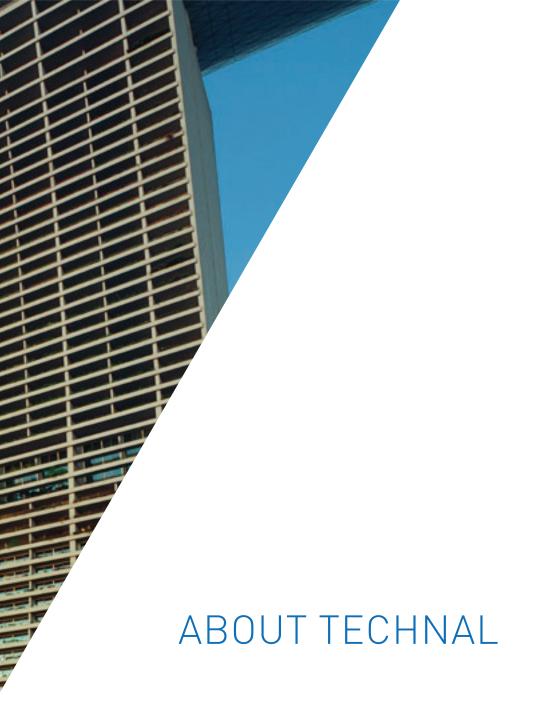


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Imagination makes the world go round. At TECHNAL, it's our driving force and way of doing things. It allows us to move forward, innovate and inspire. Where others just see a window, we see cutting-edge technology that benefits both the users and the environment. We see the future.

The TECHNAL brand from Hydro was created over 60 years ago and is a pioneering international specialist in architectural aluminium systems. We have established an unrivalled reputation for innovative and inspiring design solutions, building up a portfolio of impressive award-winning projects.

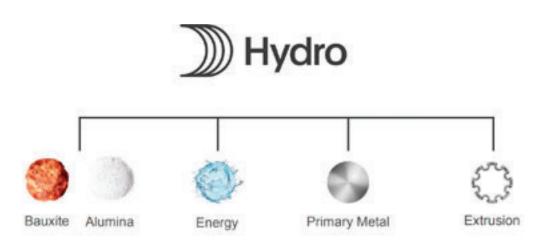
Our aluminium building solutions have been used to create purposedesigned façades, windows and doors for diverse sectors of commercial and residential buildings. We have a clear understanding of the requirements of architects, contractors, developers, fabricators and occupiers which enables us to develop an innovative, technically advanced and flexible product portfolio.

## **TECHNAL**

## / A BRAND OF THE HYDRO GROUP

Hydro is a completely integrated aluminium company employing 34,000 people in 40 countries on all continents. It combines a local expertise, a global reach and unrivalled capacity of research and development and growth capabilities.

In addition to the production of primary aluminium, and extruded products and recycling, Hydro also mines bauxite, refine alumina and energy; making it **the only 360° company in the global aluminium industry.** 



TECHNAL is a brand of aluminium windows, doors and façade systems that is part of the Hydro Building Systems group counting alone:



**2800** employees



28

Hydro Building Systems division (part of the extruded aluminium) offers a comprehensive range of aluminium solutions for the building and construction industry with a strong focus on sustainability and a commitment to reducing embodied and operational carbon footprint.

Hydro is a global supplier of aluminium and renewable energy products. In addition to building systems, Hydro has several other divisions and they all work together to provide high-quality aluminium and renewable energy solutions for a wide range of industries and applications from mine to consumer - and recycling.



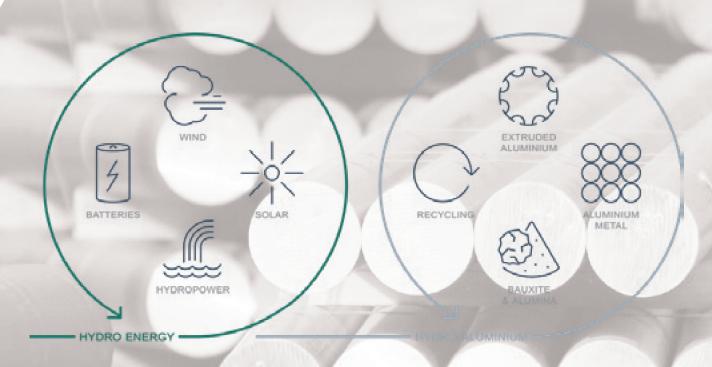


30 000 employees





**140** locations



# MORE THAN **25,000 MT OF CO<sub>2</sub>** SAVED SO FAR WITH HYDRO CIRCAL

## **TECHNAL**

## / THE TRUSTED FRENCH BRAND

Created in Toulouse in 1960, TECHNAL is a French company offering aluminium building systems that are designed to inspire contemporary architecture: façades and curtain walls, doors, windows, sliding doors, balustrade, pergolas, ...

Thanks to its globally recognised expertise and increasingly inventive and powerful technical solutions, the brand is able to respond to new challenges on a daily basis, resulting in creative, intelligent and liberated architecture.

In a word, it's living!

As a market leader, its excellence, know-how, unique design and innovative vision have set the standard in France and throughout the world.

TECHNAL's solutions can be adapted to each residential project, linking inside and outside spaces with large dimensions, pure design and maximum performance to meet your home's various needs, **from new buildings to renovations.** 

We also develop **tailor-made solutions** to meet the aesthetic and comfort requirements of our partners.

Imagination makes the world go round. Here at TECHNAL, it's our driving force and way of doing things. It allows us to move forward, innovate and inspire.

Where others just see a window, we see cuttingedge technology that benefits both the users and the environment.

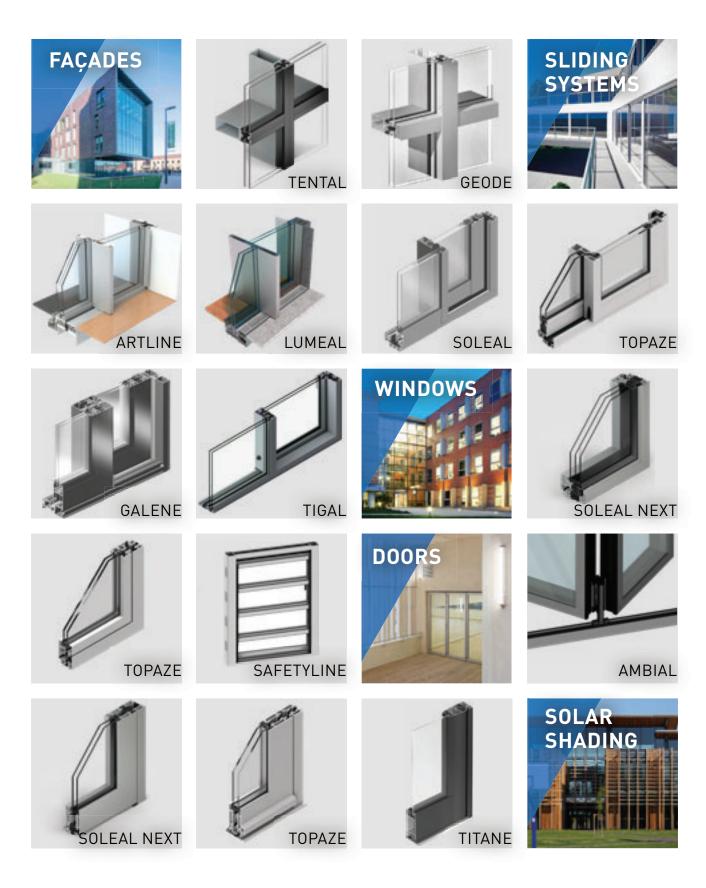
We see the future.



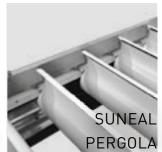


## PRODUCT RANGE

/ Complete building envelope solutions for your specific needs...



































## ... featuring specifications complying with your requirements













**ACOUSTIC** 

AIR PERMEABILITY TIGHTNESS

WATER

THERMAL INSULATION

WIND RESISTANCE RESISTANCE

DUST



LIGHT CONTROL



**SECURITY** 



FIRE RESISTANCE



DISABLED **ACCESS** 



**MOTORISATION** 



**DIMENSIONS** 

## MARKET PRESENCE

/ SOLUTIONS ACROSS MANY DIFFERENT SECTORS

















# INNOVATION & TEST CENTRE IN TOULOUSE, FRANCE

/ TRIED AND TESTED SOI UTIONS BEFORE PRODUCT I AUNCH

TECHNAL have several test centers located around the world where we test our products to ensure they meet the required standards. In Toulouse, France, TECHNAL has a Test Center that is dedicated to testing the building systems under various conditions, such as wind, rain, and thermal insulation. The center is equipped with advanced technology and state-of-the-art equipment to simulate different environmental conditions and test the performance of their products.

It conducts all kinds of preliminary studies at the prototype stage, as well as multiple tests on finished products, which include a whole battery of test benches:

- · Mechanical resistance,
- Opening-closing
- · Manoeuvrability,
- · Shocks,
- Thermal resistance,
- Corrosion resistance,
- AEV (Air permeability, Water tightness, Wind pressure resistance)
- Acoustic

The TECHNAL Toulouse Test Center is an important part of the company's quality control process and allows us to continuously improve our products to meet the ever-changing demands of the building industry. This test center provides a wealth of information that is then shared and disseminated around the world, according to national and international standards and regulations, in order to be able to offer in each market high quality products that go beyond the most stringent requirements in terms of quality regulations.



# DESIGN MARKS OUR DIFFERENCE

## / WHEN DESIGN MEETS PRACTICALITY

At TECHNAL, design is not just about purely aesthetic considerations. On the contrary, it is a constant concern that encompasses several complementary dimensions: functionality, respect for the environment, ergonomics, energy savings, integration and why not, a good dose of singularity.

TECHNAL solutions combine aesthetic design with a large choice of colours and accessories, as well as concealed elements, bringing elegance and modernity to a building. Our products establish a dialogue between the interior and exterior, and our façades revolve around large glazing surfaces. Curtain walls, windows and doors, which come in multiple shapes and colours, provide adequate answers to the different needs expressed by architects and designers:

• Our minimal profiles have slim, subtle sightlines to reduce visible aluminium; bringing in more natural light and leaving more space for transparency to highlight the design and the environment.

- Our ranges come with optional features such as concealed elements like hinges, handles and drainage to match the design without compromising the quality.
- A wide variety of handles and accessories offering all the required flexibility to adapt in harmony with different architectural styles.
- In addition, special attention is given to colour processing, with the combination of exclusive colour lines and traditional collections, we offer various finishes (anodized, powder coated, etc.).









In 2018, the building and construction industry accounted for 39% of the world's energy and process-related carbon dioxide emissions. Legislation is forcing the building and construction industry to bring down its greenhouse gas emissions, and quickly. Consequently, building systems suppliers are being asked to adjust and accept a new role because not only do they need to develop technically advanced systems that are built to last, they need to manufacture such systems with the lowest-possible carbon footprint and they need to be able to prove that they themselves are sustainable suppliers.

## TOWARDS A CIRCULAR ECONOMY

In a sustainable future, our continued success will depend on our ability to offer systems that combine top performance with a low carbon footprint. It will also depend on its ability to become a sustainable supplier. In this work, collaboration will be key, both with customers as well as with suppliers.

As a fully integrated aluminium company, Hydro has been attacking this challenge from all parts of the value chain, and for several years now. It has addressed the mining of bauxite and refining of alumina, the production of primary aluminium, the high-tech sorting of post-consumer scrap and development of low-carbon aluminium alloys, and the commercialisation of sustainable building systems.

Acknowledging that change needs first to occur internally, so we have imposed sustainability targets and have identified several inside-out actions divided into:

- Greener metal sourcing
   Hydro CIRCAL®, Hydro REDUXA®, low-carbon remelted aluminium
- Greener components sourcing
  Recyclable, bio-sourced, low-carbon accessories
- Greener production and sites
  Energy used, water, waste and fumes treatment
- Greener transport and packaging
  Less packaging, transport route optimisation
- Greener workplace
   Commuting and travel, IT and data

#### Aluminium is key to zero-energy buildings

Lightweight and infinitely recyclable aluminium is increasingly the material of choice. It accommodates growth while constraining carbon emissions.

#### We are transparent

We use EPD to communicate precise, transparent and comparable information about the life-cycle environmental impacts of a product.



#### Among the greenest alumimium in the world

Producing some of the aluminium with the lowest carbon footprint in the world, Hydro wants to make sure that this attractive metal is made available to consumers who care about the sustainability of the products they use.



Hydro CIRCAL® is the most attractive alloy available to the building market, in terms of carbon footprint. Its footprint of 2.3 kg  $\rm CO_2$  per kg of aluminium is more than three times lower than the primary aluminium average in Europe and more than six times lower than the global average.

This alloy contains no less than 75% post-consumer scrap, taken from dismounted windows and façades. Hydro CIRCAL® is verified by DNV GL and confirmed by an Environmental Product Declaration (EPD).



Meanwhile, Hydro REDUXA $^{\odot}$  – a primary aluminium product – offers a carbon footprint of maximum 4.0 kg CO<sub>2</sub> per kg of aluminium. This alloy, too, has been verified by DNV GL and confirmed by an EPD.

Hydro has achieved this low footprint for Hydro REDUXA® by using the same source of bauxite and alumina and by operating improved-efficiency smelters based on hydroelectric power. Other contributing factors are the improved sourcing of anodes and full control on the steps where it sources the cold metal.



#### Certified aluminium makes a difference

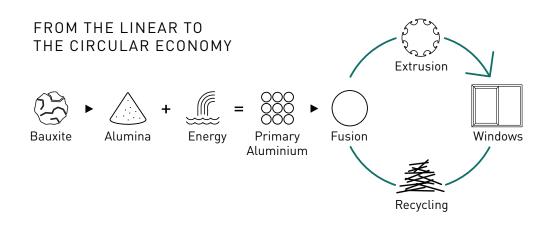
More and more consumers, companies and public procurers are making purchase decisions using sustainability criteria. For this, objective labels, standards or certificates are a useful aid because they indicate under which environmental and social standards the products were produced.



The leading multi-attribute, multi-industry sciencebased standard for verifying products for the circular economy with integration of beneficial Environment, Social and Governance features. We work continuously to lower our own emissions, increase recycling and help our customers develop products that enable  $\rm CO_2$  savings – among others. In order to do so we have obtained the following certifications for parts of our production, and continuously work to roll this out across our business.



Independent certification scheme covering the entire value chain of aluminium to address sustainability challenges from a Environment, Social and Governance issues perspective.





## 100% INFINITE ALUMINIUM

Aluminium is a unique material that can be fully recycled without any loss in quality or physical properties. There are estimated to be 200,000,000 tonnes of aluminium objects worldwide that can be recycled when they reach the end of their life cycle. Hydro uses this process to replace the extraction of bauxite with the recycling of post-consumer material, in an effort to limit the exploitation of natural resources and prevent objects from being discarded into the environment. This process, known as urban mining, aims to turn cities into the main supply points of raw materials and preserve natural spaces on Earth.



## -95% OF ENERGY CONSUMPTION

With the current industrial processes, the production of primary aluminium (from the extraction of Bauxite) requires a large amount of energy, which results in abundant emissions of CO<sub>2</sub>, the main greenhouse gas and direct cause of climate change. Post-consumer aluminium remelting saves up to 95% of this energy, obtaining a raw material of exactly the same quality.

## -85% OF CO2 EMISSIONS

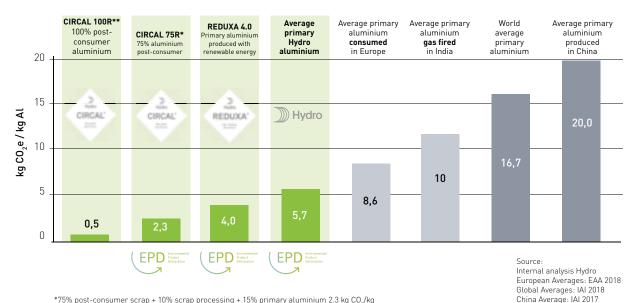
The result of using Hydro CIRCAL® 75R is a drastic reduction in emissions of more than 85%, if compared to the world average of primary aluminium production (18 kg of CO, per kg of material). With its 2.3 kg of CO, per kg of material, Hydro CIRCAL® is currently the aluminium with the lowest emissions on the market and the aim is to reduce them to total post-consumer recycling levels.



## **75%** OF POST CONSUMER RECYCLED ALUMINIUM

Hydro CIRCAL® 75R is the world's first certified recycled aluminium. 75R means that at least 75% of new aluminium comes from postconsumer material. The substantial difference with other more common industrial processes that use their own manufacturing waste is that Hydro CIRCAL® finds a new life for windows that have already been used in a building. Far from being the final result, for Hydro CIRCAL®, 75% is a minimum requirement for a continuous process that aims to progressively reach total recycling.

#### CARBON FOOTPRINT OF ALUMINIUM



<sup>\*75%</sup> post-consumer scrap + 10% scrap processing + 15% primary aluminium 2.3 kg CO./kg

<sup>\*\*100%</sup> post-consumer scrap with near zero carbon footprint - the lowest in the world

# IMPACT OF TECHNAL WINDOWS IN A BLOCK OF FLATS

WHAT IS THE DIFFERENCE BETWEEN USING OUR WINDOWS MANUFACTURED WITH Hydro CIRCAL® 75R ALUMINIUM AND WINDOWS MANUFACTURED WITH STANDARD PRIMARY ALUMINIUM?

The average carbon footprint of aluminium consumed in Europe is 8.6 kg of  $\rm CO_2$  for every kg of aluminium. With Hydro CIRCAL® 75R, this impact drops to 2.33 kg of  $\rm CO_2$  for every kg of aluminium, which implies a savings of 6.27 kg of  $\rm CO_2$ . A typical window has around 20 kg of aluminium, generating an average savings of 125.4 kg of  $\rm CO_2$  per window.

### **WINDOWS**

1 flat = 5 windows 1 building = 50 windows 50 flats = 250 windows

#### **ALUMINIUM**

1 window = 20 kg of aluminium 250 windows = 5,000 kg of aluminium

#### **CARBON FOOTPRINT**



5,000 kg of <u>primary aluminium</u>  $\times$  8.6 kg of CO<sub>2</sub> = 43,000 kg of CO<sub>2</sub>

5,000 kg of aluminium Hydro CIRCAL® x 2.33 kg of CO2 = 11.650 kg of CO $_2$ 

Using TECHNAL® windows made with Hydro CIRCAL® in this building represents a reduction of 31,350 kg of  $CO_2$ .









Always striving to better support its partners, TECHNAL offers a complete range of software solutions as well as training adapted to individual needs.

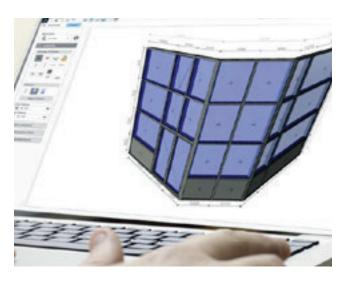
## **TechDesign**

TechDesign is a reliable and recognised software for metal builders developed for more than 25 years, selected by 5000 users in 65 countries around the world.

Easy to install locally on a network or through cloud solution using the latest technology to quote complex projects ... Imagine Beyond Limits.

TechDesign helps you to calculate all of your joinery quotes, generate all orders for your suppliers, prepare very comprehensive manufacturing files for the workshop and control your machining centres.

# BIM OBJECT CONFIGURATOR FOR TECHNAL ALUMINIUM JOINERIES



## Tech3D

Tech3D® is an innovative and simple sketching tool which has been specially designed for architects and specifiers, saving time to produce 2D, 3D drawings and 3D renders for architectural aluminium façade designs. They can be integrated in your BIM project.

#### Create

Easy formatting of your concepts and ideas by incorporating the TECHNAL range. Simple creation of renderings from the very early stages of the project.

#### • Visualise:

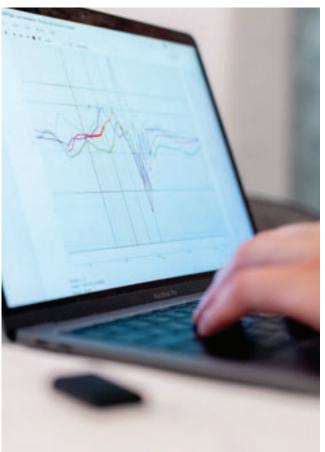
Quickly visualise the product in realistic proportions with a significant level of detail. Offering both internal and external views, the different configurations and options can be evaluated and developed.

### Communicate:

Compatible with all CAD tools used by architects (2D and 3D drawings can be imported and exported). Possibility of integrating your SketchUp projects into Tech3D® to add a TECHNAL product according to the 3D volumetry defined upstream. 2D elevation drawings can be imported as models to create 3D renderings and can also be exported for use in most CAD software on the market, such as Autocad®, Bentley®, Archicad® and ADT®. 3D rendering can be exported in various formats for use with Sketchup®, Autodesk 3Ds Studio Max®, Revit®, Archicad® and meet the 3D modelling needs of the BIM digital model.

## THE ACOUSTIC PERFORMANCE EVALUATION SOFTWARE





## **TechAcoustic**

## THE ACOUSTIC PERFORMANCE EVALUATION SOFTWARE

Reliable, TechAcoustic® is the only tool in the market that can ensure an evaluation accuracy of more or less 1 dB, the equivalent of a laboratory test, regardless of the composition (size and glazing).

Benefits are time and cost savings for the owners and metal builders who get, in a few clicks, the performance of their choice. This advanced software also performs exact models on complex projects and large joineries.

#### • Cost optimization:

Help with choosing the most appropriate range and glazing to achieve the desired levels of acoustic performance. It is no longer necessary to choose over-performing and expensive glazing.

#### • Ease of use:

Thanks to its intuitive and ergonomic interface, you don't need to be an expert in acoustics to evaluate the performance of a window.

#### Scope of application:

With TechAcoustic®, you can obtain the acoustic performance of the joinery regardless of the size or type of infill, and also in the case of a complex units (several opening and fixed sections), and always with the same degree of accuracy.

#### Accuracy:

The complexity of the computational algorithms guarantees a result with an accuracy of +/- 1 dB, which is similar to the results obtained in other laboratories

#### Speed of evaluation:

It takes just a few clicks to define the joinery to be evaluated and the result is instantaneous.





TECHNAL has a rich history in the Indian market that spans over several decades. The company first entered India in the early 1990s through a partnership with a local company. At that time, TECHNAL introduced its innovative aluminum architectural systems to the Indian market, which quickly gained popularity among architects, builders, and developers.



## TECHNAL INDIA

## / MORE THAN 25 YEARS IN THE REGION

TECHNAL's history in India is characterized by a commitment to innovation, sustainability, and customer satisfaction, which has helped to establish the company as a trusted and respected brand in the Indian construction industry.

TECHNAL has a strong presence in India, where it offers a wide range of high-performance aluminum architectural systems and solutions to meet the needs of the Indian market.

One of TECHNAL's key strengths in India is its focus on innovation and sustainability.

The company has always been at the forefront of developing new and innovative products and solutions that meet the specific needs of the Indian market. For example, TECHNAL has developed curtain wall systems that are designed to withstand extreme weather conditions, such as heavy rain and high winds, which are common in many parts of India.

In addition to its focus on innovation, TECHNAL has also been committed to sustainability in India. The company has developed a range of energy-efficient products and solutions that help to reduce the carbon footprint of buildings. For example, TECHNAL's windows and doors are designed to provide excellent thermal insulation, which can help to reduce energy consumption and lower carbon emissions.

TECHNAL's success was spread by our key customer segment in the region that represent a diverse range of stakeholders in the industry. We work closely with them to provide them with high-quality aluminum solutions that meet their specific needs and requirements.

**Developers and Contractors**; we also work with many real estate developers and contractors in the region, providing them with high performance fenestration solutions and helping them meet their energy efficiency and sustainability goals.

**Architects and Designers**; we collaborate with them from the early stages of the design, providing them with highly customizable solutions tailored to the unique needs of their projects.

Fabricators and Installers; we work with more than 70 approved fabricators in the region, providing them with the training and support they need to deliver high-quality installtions of our solutions. Our products are designed to be easily fabricated and installed which can help our customers to complete projects more efficiently.



# DEDICATED AND PROFESSIONAL SUPPORT TEAM IN INDIA

#### 35 Team Members

Highly dedicated and motivated group of individuals who are committed to providing exceptional support to our customers and partners. Their expertise and experience allow us to handle even the most complex challenges with ease and efficiency.

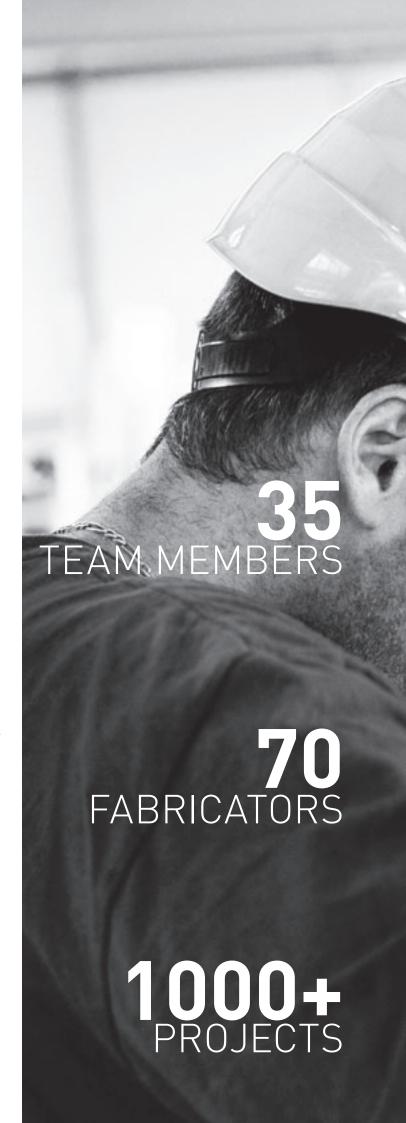
Each team member brings a unique set of skills and strengths to the table. Care, Courage and Collaboration are key components of our success, and they work tirelessly to ensure that they are always on the same page and working towards the same objectives.

#### Our network of 70 authorized fabricators

Is a key component of our success. They work under our close supervision, receiving training and support to ensure they can deliver our solutions with the highest quality and expertise. We take great pride in our relationships with these fabricators, and we work hard to foster an environment of collaboration and shared success. Together, we are able to provide our clients with the exceptional service and solutions they expect from us.

## Through an extensive portfolio of more than 1000 project in India

We have gained invaluable experience and expertise in various industries. Which exposed us to different challenges, clients, and markets and has enabled us to develop a deep understanding of the region's unique needs and requirements. This experience has not only helped us deliver successful projects but has also positioned us as a trusted and reliable partner for businesses looking to expand in India.





## TECHNAL SERVICES

/ WHAT WE OFFER



ACCESSORIES & FITTINGS



**PROFILES** 



TOOLS & METHODS



**TRAINING** 



**TESTS** 



PROJECT SERVICE



MULTIMEDIA INTERNET



LOGISTICS



SOFTWARE & BIM



CONSULTING



OPTIMIZATION OF PRODUCTION



TESTS AND CERTIFICATIONS

## PROJECT SERVICES

/ HOW WE CAN HELP YOU

The design and technical support teams are working closely with architects and manufacturers, to achieve the best quality of installation for all types of buildings, but also for special creations of specific profiles and solutions.

TECHNAL has capabilities to meet the needs of each project through custom-made concepts: for specific performance improvements and innovations



## CONCEPT / SCHEMATIC DESIGN STAGE

- Review Architectural Design
- Provide Typical System Details
- Suggest Material Specifications



## DESIGN DEVELOPMENT CONSTRUCTION DRAWINGS

- Produce Detail Drawings
- Coordinate Façade with Other Domains
- Finalize Materials
- Provide Performance Specification
- BIM Support
- Assist in Cost Estimate



## **TENDER STAGE**

- Nominate Technal Approved Network Fabricator
- Recommendations to Client, Architect and Project Stakeholder
- Value Engineering



## **CONSTRUCTION STAGE**

- Review Contractor Submissions
- Periodic Site Factory Inspections
- Assist in Site Design Amendments



## PROJECT REFERENCES

Our aluminum building solutions have been used to create purposedesigned façades, windows and doors for diverse sectors of commercial and residential buildings. We have a clear understanding of the requirements of architects, contractors, developers, fabricators and occupiers which enables us to develop a innovative, technically advanced and flexible product portfolio.

#### In INDIA:

TECHNAL is a well-known brand in INDIA, and our architectural solutions have been used in many high-profile projects throughout the region.

The following are just a few examples of the many TECHNAL projects in India and its surrounding, and we continue to be a leading provider of high-quality building systems in the region.



## HARMONIOUS SOLUTION INTEGRATION

/ THE ADDRESS SKY VIEW, Dubai, United Arab Emirates

The Address Sky View is a striking architectural masterpiece located in the heart of Dubai. Designed by the renowned architects, NORR, the building is a stunning example of contemporary high-rise design. The façade of The Address Sky View is a testament to the innovative and forward-thinking design that is synonymous with Dubai's architecture.

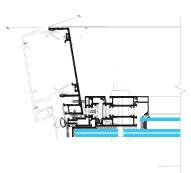
The most striking feature of the building is the distinctive void in the center, which creates a breathtaking view of the city from every angle. The building's two towers are connected by a cantilevered Sky Bridge, which provides a unique vantage point to enjoy panoramic views of the city.

The exterior of the building is made up of sleek, geometric lines that give the building a modern, futuristic appearance. The façade is cladded with TECHNAL's GEODE unitized system with integrated concealed balcony doors, customized to provide a continuous sleek and reflective surface that mirrors the surrounding skyline throughout the day. The interior of the building is equally impressive, with

spacious and elegant public areas that are designed to create a sense of luxury and sophistication. The building's interior features an abundance of natural light, which floods the space through the floor-to-ceiling curtain wall.

The Address Sky View is a remarkable architectural achievement that combines striking design with luxurious amenities to create an unforgettable experience for guests and a landmark in Dubai downtown's skyline.





Concealed fully glazed hinged doors

