

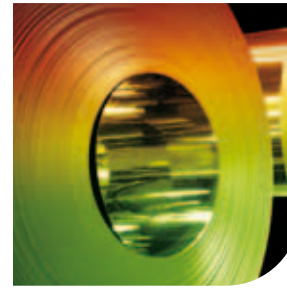


ArcelorMittal

Innovative organic coated steel for sustainable building solutions, **N**spired by **Nature**



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Discover *Nature*, our new organic coated steel collection

Introduction

At ArcelorMittal, we truly believe in the principals of sustainable development and are fully committed to making sure that our steel contributes to the future growth of environmentally responsible construction.

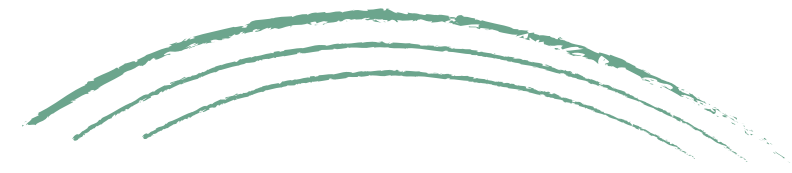
As such, ArcelorMittal has invested billions in new technologies over the past two decades, resulting in subsequent reductions in energy consumption and CO₂ emissions, a reduced life cycle impact and increased volumes of steel scrap being recycled. This long-standing commitment to sustainability has made ArcelorMittal the world's n°1 producer of recycled steel.

While we work to safeguard natural resources, we proactively search for solutions that protect the environment. ArcelorMittal is therefore able to anticipate future regulations and safety measures including the European Union's REACH regulations on the Registration, Evaluation, Authorisation and Restriction of Chemical Substances.

Our newest *Nature* collection of organic coated steels is always delivered with coatings and surface treatments **free of hexavalent chromium* and heavy metals (lead or hexavalent chromium complex)**. Such innovation – made only possible by many years of dedicated research and successful testing – further strengthens our position as a pioneer of organic coated steel coils, panels and profiles, making us the industry's leading supplier of sustainable building solutions.

By launching our *Nature* product collection of organic coated steels, we want to offer this sustainable advantage to your projects.

* Substances of Very High Concern included in the candidate list of REACH



We don't just supply steel, we provide you with the tools and *Nspiration* you need to design and engineer each project.

A responsible choice

While the common objective of green construction is to reduce the overall impact buildings have on human health and the environment, natural building principals focus on using materials that are not only safe for the natural habitat but improve the occupants' spiritual and physical wellbeing.

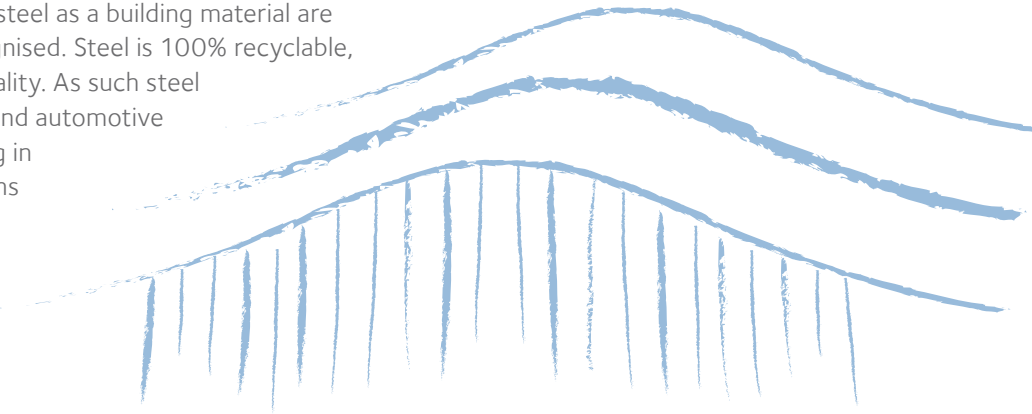
Steel meets challenges posed by climate change, poverty, population growth, water distribution and energy for which it is already the natural choice material in generating renewables including wind turbines, solar panel structures and other applications.

At ArcelorMittal we pride ourselves in working closely with architects and engineers, proposing innovative and aesthetic products and design solutions that:

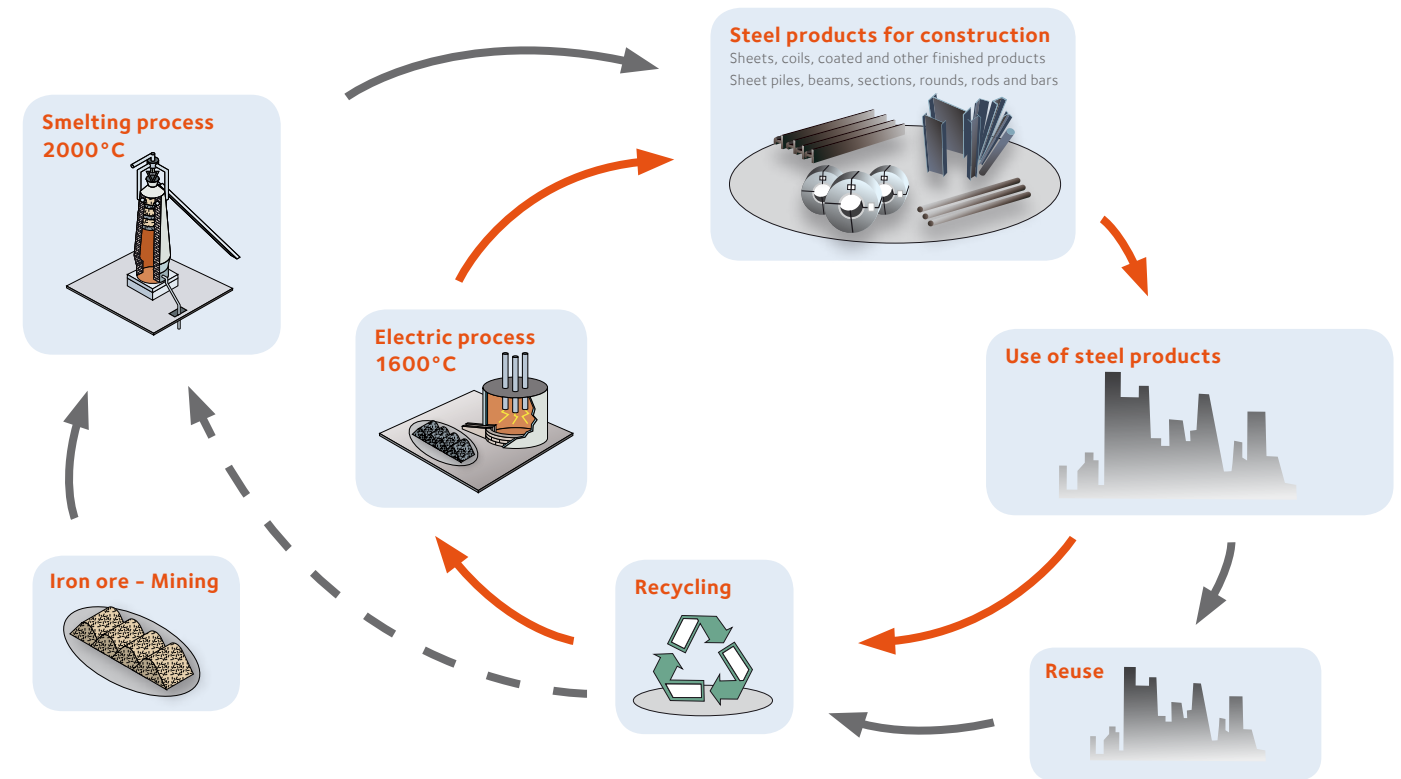
- Protect occupant health and wellbeing.
- Reduce waste, pollution and environmental degradation.
- Efficiently use energy, water and other resources.
- Are 100% recyclable.

Reduced CO₂ emissions ...

The environmental advantages of steel as a building material are well documented and widely recognised. Steel is 100% recyclable, indefinitely and without loss of quality. As such steel recovery within the construction and automotive industry is as high as 85% resulting in 600 million tonnes of CO₂ emissions savings each year.



The steel recycling loop



Steel is 100% recyclable, indefinitely and without loss of quality.

“ Due to constant evolution of cities and the needs of their inhabitants, the lifespan of buildings today has been considerably reduced. As such, their recycling needs to be considered and here steel has a distinct advantage over cement.”

Anne Pezzoni, Archi5, France

For safe and sustainable building

According to a recent report produced by the World Business Council for Sustainable Development (WBCSD), buildings are responsible for at least 40% of energy use in most countries, with the absolute figure rising fast as construction booms especially in China and India. Importantly the report highlights opportunities to promote sustainable building know-how and technologies including Zero Energy Building (ZEB).

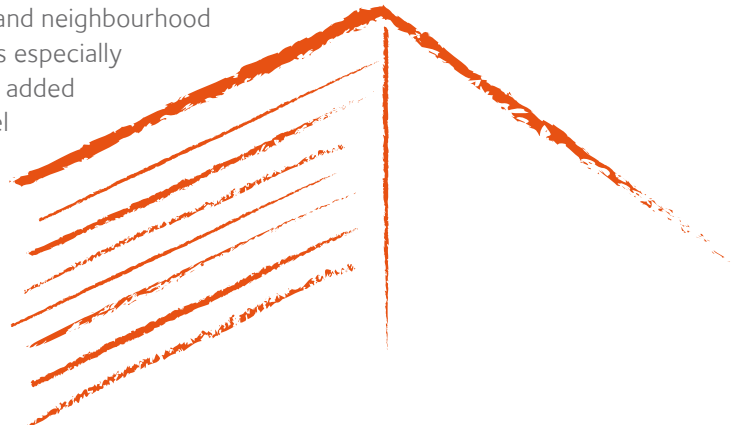
While ArcelorMittal continues to invest in new technology, we already propose many types and grades of steel that are ideally suited for making buildings more energy efficient, including steel for sustainable roof systems which prolongs envelope life, reducing roof surface temperature in hot and sunny climates. For example, with an external temperature of 35°C, the surface temperature of the steel can be as much as 11°C cooler using a typical brown or green roof.

“It’s interesting to think of steel as a material that can be easily deconstructed and reused for another building, in another place.”

Sergio Baragaño, [baragaño], Spain

Easy to construct ...

The use of ArcelorMittal’s prefabricated (organic coated, lightweight and easy-to-erect) steel elements speeds up construction time while reducing the risks of accidents, pollution and neighbourhood nuisance on the construction site, which is especially important in congested urban areas. With added thermal performance and aesthetics, steel gives buildings a longer, healthier life.



... flexible ...

Steel makes it much easier to adapt buildings to new and innovative uses. A steel building characterised by the absence of load bearing walls is intrinsically more versatile and flexible than other types of structure. Steel is already widely used for the construction of horizontal extensions and thanks to its light weight, is fast becoming the only viable solution for vertical extensions.

... and conserving natural resources

Thanks to steel’s inherent mechanical properties (particularly its high strength-to-weight ratio) steel construction requires less material than traditional building technologies, helping to reduce a building’s environmental impact and conserve natural resources.

ArcelorMittal’s products are ideally suited for making buildings more energy efficient, giving them a longer, healthier life.



Inspiring innovative design solutions and applications that make best use of each of our products' unique characteristics.

Discover how our R&D teams evaluate the sustainability of a building

When evaluating the sustainability of a building it is essential to take into account every phase of a building's life, from the actual extraction of raw material to production, transportation to the construction site and construction operation itself through to the operational use of the building, demolition or dismantling, waste disposal and recycling.

At ArcelorMittal we are closely involved in all stages of the life cycle of steel and are therefore ideally placed to provide full Life Cycle Assessment (LCA) for any building, however large or complicated the project may be. One of the most critical assessment phases occurs during actual occupancy. Once again ArcelorMittal is able to help provide solutions:

- Locating thermal weaknesses
- Monitoring the building's energy consumption
- Measuring the building's air tightness

When proposing more sustainable scenarios (typically those with lower energy consumption and CO₂ emissions), every aspect of the building's design, location and use is taken into consideration. When necessary we'll provide alternative solutions, which may include combining steel with other materials.



Steel: strong sustainability performance throughout the life cycle of a building

STEEL MATERIAL

- 100% recyclable. Steel recovery rate 85% for construction
- Steel recycling saves millions of tonnes of CO₂
- Manufacturing process with environmental impact (-20% of CO₂ emission and energy consumption over 20 years)
- Steel is environmentally inert
- Durability

CONSTRUCTION PHASE

- Prefabrication/offsite manufacturing: quality control and construction site optimisation (reduce lead time, nuisance)
- Dry system reducing environmental impact on site

END OF LIFE

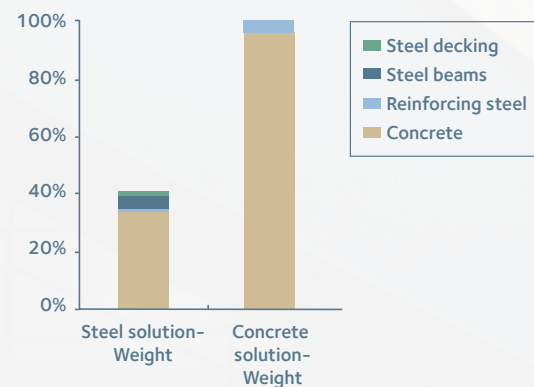
- Easy dismantling
- Re-usability
- Recyclability: 100% and indefinitely recyclable without quality loss

DESIGN AND SERVICE LIFE

- Weight reduction of structure, reduced consumption of materials and conservation of natural resources, possible use of sites with low load bearing capacity
- Thermal efficient organic coated steel: reduction of energy consumption in service and more comfort for the user
- Long spans: creation of versatile spaces, capable of change over time
- Extensions, modifications possible
- Excellent acoustic insulation of steel solutions
- Longevity and robustness of steel components

Mass balance

Comparison of the environmental profiles of two alternatives for a four floor building structure: steel intensive versus concrete intensive solutions



Source: ArcelorMittal Long Carbon Europe & R&D study 2011

Coil coating, a sustainable process

Organic coated steel offers exceptional economic and technological advantages and is certainly the product best placed to respond to present and future environmental regulations.

The extreme durability and versatility of organic coated steel has led to its wide use in the building industry: from wall cladding and roofing, to different innovative forms of suspended ceilings and lighting applications.

Production

Organic coated steel is produced on industrial lines that are designed to meet the most stringent environmental regulations concerning surface treatments, solvent emissions and the absence of harmful substances in the composition of the paint. Our steels already comply with standards such as ISO 14000/1 in this regard.

At ArcelorMittal, we combine our advanced coil coating technology with a selection of high-quality paint systems, guaranteeing their aesthetic appearance and long-term durability. Whatever the project or intended use for the steel, coil coating remains the most efficient and ecological process to apply long-wearing paint finishes on metallic surfaces.

Working conditions

Using organic coated steel in buildings improves conditions in the workshop as the use of solvents and the need to handle and store chemicals are eliminated.

Guaranteed quality

All ArcelorMittal's organic coated products undergo rigorous laboratory and outdoor tests. Featuring different coatings and thicknesses, each product is exposed to different corrosion and weathering conditions (including resistance to ultraviolet light) at various natural locations around the world. Only upon completion of such evaluations and after performance checking can a new product be delivered to the end user.

As the world's leading supplier of organic coated steel coils, panels and profiles, ArcelorMittal offers its customers the benefits of its long experience of supplying building envelopes for the entire European market.



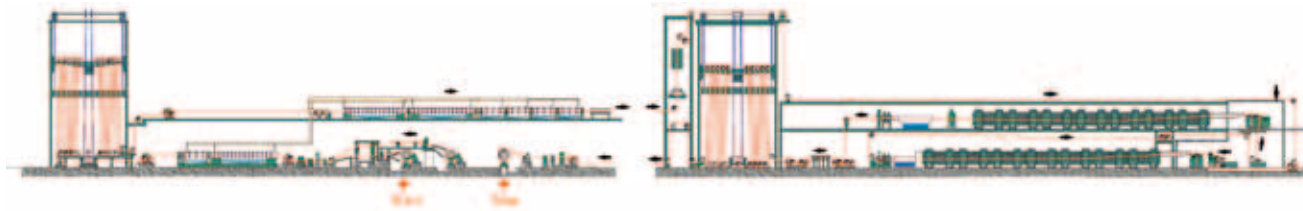
ArcelorMittal samples at natural exposure sites
› Brest, France

Benefits of a local supply

ArcelorMittal coating lines are conveniently situated throughout Europe, providing added advantages to both the customer and the environment. This close proximity offers our customers a larger and more flexible choice of products, quantities and colours while helping reduce transport costs and CO₂ emissions. ArcelorMittal Quality Managers are also available to advise and support customers.

Recycling

At the end of its life cycle, organic coated steel is 100% recyclable, just like all other steel products.



“ ArcelorMittal's steels are attractive because they are more durable and since they come organic coated, we also save on construction time.”

Sergio Baragaño, [baragaño], Spain



Our new sustainable organic coated steel collection, Nspired by Nature...

ArcelorMittal is proud to announce the release of our new organic coated steel collection in 2012 entitled simply **Nature**. The collection is delivered with coatings and surface treatments free of hexavalent chromium* and heavy metals (lead or hexavalent chromium complex) as defined by European Union's REACH regulations on the Registration, Evaluation, Authorisation and Restriction of Chemical Substances.

ArcelorMittal gives automatic guarantees on its Nature collection of organic coated steels of up to 30 years, depending on the environmental conditions at the construction site.

* Substances of Very High Concern included in the candidate list of REACH



... and especially designed for environmentally responsible construction (HQE, BREEAM, Leed...)

The benefits of the ArcelorMittal Nature collection

- Free of hexavalent chromium compounds (SVHC)
- Free of lead and other heavy metals
- Guaranteed up to 30 years
- Fully tested by our R&D experts to extreme corrosion and weathering conditions, both in the laboratory and outdoors
- Innovative aesthetics for a more harmonious integration in the environment
- Reflective coatings allow more comfortable living conditions, reducing indoor temperatures by a few degrees in hot and sunny environments



About REACH

The aim of REACH (Registration, Evaluation, Authorisation and Restriction of Chemical Substances) is to improve the protection of human health and the environment through the better and earlier identification of the properties of chemical substances.

Registration is the basis of REACH. Manufacturers and importers are required to gather information on the properties of the substances they place on the market, which will help manufacturers and users to manage them safely.

Authorisation aims at restricting the use of the most dangerous substances. To this end, hexavalent chromium compounds, a.o. strontium chromate and chromic acid, have been gradually included in the candidate list of Substances of Very High Concern (SVHC).

For more information: <http://echa.europa.eu>

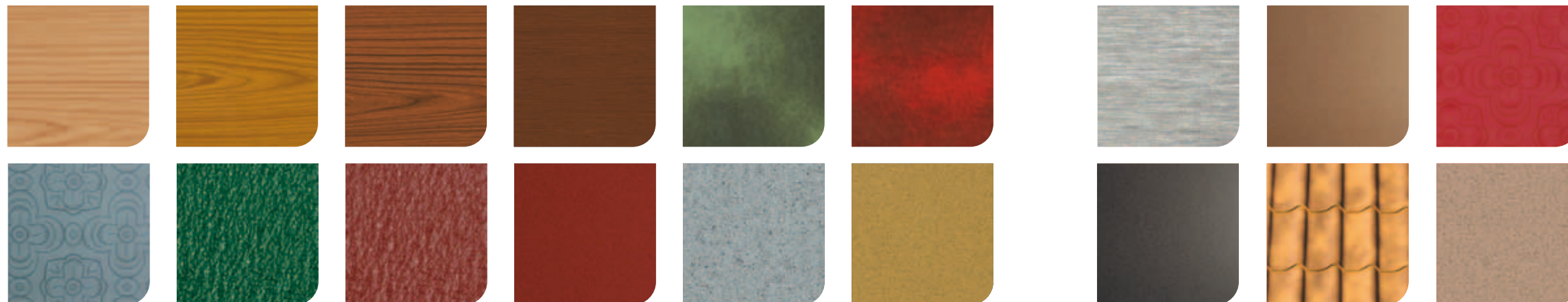
The Tasta Offices - Block C3 › Bruges, France
Alain Triaud & Luc Arsène-Henry Jr. Associated Architects
Emmanuelle Poggi & Arnaud Garrigue Associated Architects

Sustainable aesthetics

For a better integration in the environment, ArcelorMittal has developed aspects that fit perfectly to your designs.



Le phare de Chambéry • Rhône-Alpes, France
Patriarche & Co



Discover our wide range of colours and textures online:
www.arcelormittal.com/industry
www.arcelormittal.com/arval

“ It is time to change our mentality. Our traditional way of building using concrete is no longer sustainable. The steel industry must find its place in today’s evolving world.”

Anne Pezzoni, Archi5, France



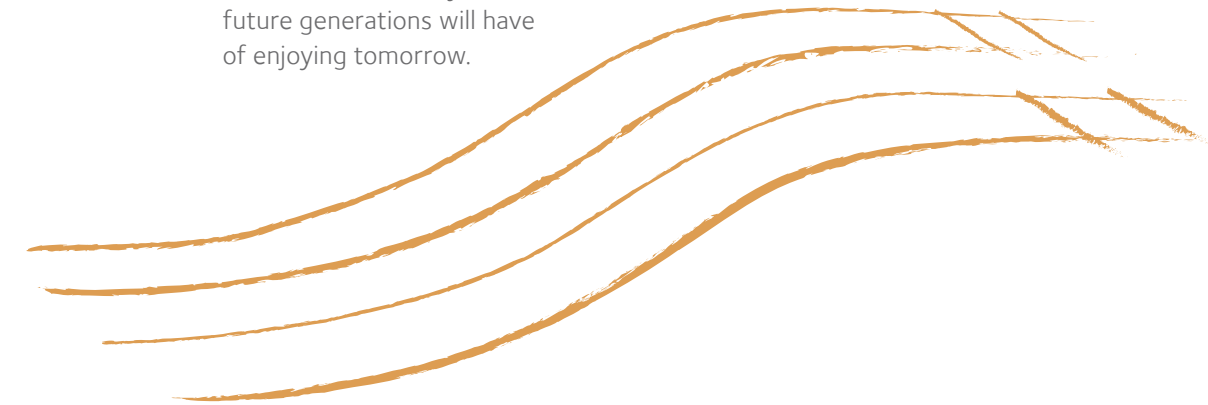
Marcel Sembat High School › Sotteville-lès-Rouen, France
Archi5 with B. Huidobro

Leading the way forward

Today we commit ourselves to working further and closer with architects, engineers and designers to ensure our products have a positive effect on our lives and our environment. This means:

- No increase in energy consumption.
- No hazardous substances.
- Move to local renewables with respect to local trade and resources.

As our society moves towards a more environmentally sustainable future, ArcelorMittal will continue its investment in innovation and technology. The more responsible our actions are today, the better chance future generations will have of enjoying tomorrow.



“ The main benefit of steel is its light weight. By consequence it is extremely durable. In today’s world with its inescapable density, steel is the perfect tool for rehabilitation and extension. Organic coated steel allows for faster and cleaner assembly and thanks to its prefabrication, there are no unexpected surprises in terms of aspect.”

Anne Pezzoni, Archi5, France

Credits

Archi5/Thomas Jurion with B. Huidobro
Bessard L. Architects
A+ Architecture Agency
Sergio Baragaño, [baragaño]
Alain Triaud & Luc Arsène-Henry Jr. Associated Architects
Emmanuelle Poggi & Arnaud Garrigue Associated Architects
Patriarche & Co
Mariela Apollonio (www.fotografadearquitectura.com)
Jeroen Op de Beeck
Philippe Vandenameele
Our steel solutions for your green building/ArcelorMittal BCS
ArcelorMittal Global R&D

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This publication is printed
on Cyclus 100% recycled paper.

The more responsible our actions
are today, the better chance future
generations will have of enjoying
tomorrow.



ArcelorMittal

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www.arcelormittal.com/arval