

index™
23 THE WORLD'S
LEADING NONWOVENS
EXHIBITION

18-21 APRIL 2023
PALEXPO, GENEVA

Preview

INSIDE | Market outlook | Discover Geneva | INDEX™ programme | www.indexnonwovens.com

A digital upgrade

Using trends to innovate

Travelling to INDEX



We love to build Plants, Machines and Components that sustainably produce the Materials **your successful Products** are made of



Wipes



Hygiene



Core



Medical



Geotextile



Filtration

Your reliable Partner in the Nonwoven Industry

Oerlikon Nonwoven is a leading solution provider of a wide range of nonwoven technologies – with our **Meltblown**, **Coform Phantom**, **Spunmelt QSR**, **Spunbond** and **Airlaid** solutions, we cover the disposable and durable nonwoven markets.

Come and visit us at Index. Booth no. 2314

indexTM
world's leading nonwovens exhibition



For further information visit us at
www.oerlikon.com/nonwoven

We offer ...

low production costs through high capacity production, low waste rate, low energy consumption and higher yield.

We promise ...

high product performance with low basis weight to meet the leading market requirements.

oerlikon
nonwoven

A digital upgrade for INDEX™ 23

INDEX™23, the World's Leading Nonwovens Exhibition, returns to its triennial occurrence with a welcomed familiarity. With visitors expected to reach 13,000, INDEX™ is an opportunity for the industry to discover new product innovations and strategies to help navigate the current climate and beyond.

The Palexpo Exhibition and Conference Centre in Geneva will be the home of INDEX™ for the 14th consecutive year from 18-21 April. With a comprehensive and varied programme, INDEX™23 will explore central themes such as

sustainability, energy, geotextiles, health and automotive nonwovens.

Exhibitors are able to present their latest industry innovations through the Exhibitor Product Presentations. Located in Room R from 18-20 April, the presentations are free of charge and open to everyone. For the first time, the Exhibitor Product Presentations will be broadcasted live on the INDEX™23 virtual platform and mobile app and will be available to rewatch up to a month after the exhibition.

As well as the Exhibitor Product Presentations, INDEX™23 will include a range of events such as seminars,

tutorials and the return of the Lab – a new introduction to INDEX™ at the previous edition. The INDEX™ Awards will also be rewarding INDEX™23 exhibitors or EDANA members for their excellence in the nonwovens industry.

Throughout these sessions and exhibitions, visitors and exhibitors can discover the latest innovations and discuss recent technologies, with the hope of departing the event with fresh approaches as to how to help mitigate the impacts of the current challenges affecting the nonwovens industry.

Travelling to INDEX™23 in Geneva

The Palexpo Exhibition and Convention Centre in Geneva has been the home of INDEX™ since 1984, hosting the last 14 editions of the global event.

If visitors are travelling direct to the exhibition centre from Geneva Airport, the route is simple. Palexpo is located 500 metres from the airport and its underground railway station. On foot, the venue is a ten minute walk from the airport. Bus 5 gets travellers from the airport to the Exhibition Centre in four minutes.

For those travelling onwards at the end of each day of the event to Geneva city centre, it's an approximate 20-minute bus ride from Palexpo to the city and most hotels. Geneva Airport is also within 20 minutes reach of the town centre. This same route is around 10-15 minutes on foot and five minutes by bus or taxi. For rail, visitors can use the underground link to the airport railway station.

For drivers, the venue also has onsite parking facilities with 4,500 spaces.

Geneva offers a Free Transport Pass, allowing visitors to use public transportation, including buses, trams, trains and yellow taxi-boats, for free, as well as visiting most tourist attractions at a discount. Simply ask for the card upon your arrival at your hotel reception.

Opening Times

18 April: 9:00am - 6:00pm

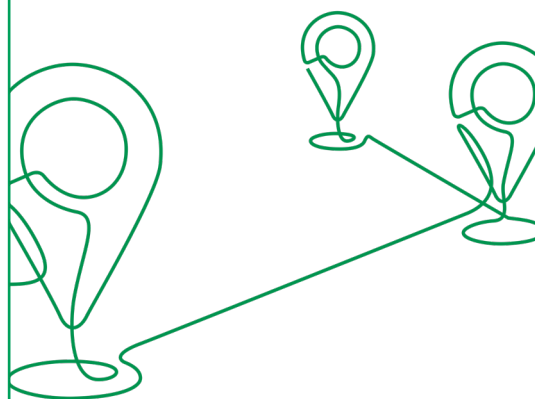
19 April: 9:00am - 6:00pm

20 April: 9:00am - 6:00pm

21 April: 9:00am - 4:00pm

Contact

Organisers: Palexpo SA
Route François Peyrot 30
1218 Le Grand Saconnex
Geneva Switzerland
Phone: +41 22 761 11 11



Seminar and tutorial listings for INDEX

Throughout the three days of seminars at INDEX™, there will be opportunities to catch up and excel in knowledge and understanding

concerning the nonwoven industry. The speakers, key influencers and innovators will touch on sustainability, environmental

engineering, the future of nonwovens, how they are essential to mobility transition, healthcare and energy, all under the same roof.

DAY 1, Tuesday 18 April

13:30-15:00 **Medical nonwovens – sustainable recycling options**

Moderator: *Christel Dendas, Consultant - ESG and Strategy Consultant*

Speaker: *David Scheeres, Founder - Thermal Compaction Group*

Robert Garcia - Application & Product Development Director | EMEIA Hygiene & Healthcare, Nonwovens - Berry Global

DAY 2, Wednesday 19 April

10:30-12:00 **Geosynthetics**

Speakers include: *Daniele Cazzuffi - IGS Past President – CESI*

Francesco Fontana - Geosynthetics Consultant - A&B

Sustainable use of Geosynthetics in mega projects in civil and environmental engineering with Daniele Cazzuffi, IGS Past President, CESI

Over the last 60 years, the use of geosynthetics has increased in civil, geotechnical and geo-environmental projects around the world for a variety of functions. In more recent decades their use instead of, or in partial combination with, natural materials – such as gravel, sand, clay and so forth – emphasised their crucial role in terms of sustainability, circular economy and in the light of the dramatic climatic change issues. Examples of the following applications from exceptional projects will be briefly shared: dams and reservoirs, tunnels and underground structures and reduction of snow/ice melting in glaciers.

Circular Economy: opportunities and limitations presented by recycling nonwoven geotextiles with Francesco Fontana, Geosynthetics Consultant, A&B

The environmental impact of geosynthetics must be assessed according to their desired performance, rather than simply their weight. Using recycled polymers to produce nonwoven geotextiles can play an important role in ensuring a circular economy. Key points to be addressed include: the contribution to the performance of the whole project, the desired durability of the structure in which the geosynthetic is incorporated, the probability of microplastics being released and the limits imposed by the current compulsory rules.

13:30-14:00

Fair and sustainable trade: How does WTO help business at times of crisis?

Bernard Kuiten, Head of External Relations, World Trade Organization

14:30-16:00

Textiles and nonwovens, a sustainable future!

- Which recycling processes are already available for creating nonwovens from textile waste?
- What are the bottlenecks and opportunities?
- Market outlook for post-consumer use for recycled textiles following the extended producer responsibility
- Innovative solutions

Speakers include: *Alexandre Butte, General Manager - Andritz Laroche and Benoît Rombaut Technical Director - Andritz Laroche; Mark Croes, Consultant Hygiene and Medical – Centexbel; Heidi van den Hul, Business Development Textiles and Nonwovens – fabriCreation.*

DAY 3, Thursday 20 April

10:30-12:00

Diversity, Equity, & Inclusion in the Nonwovens Industry

The importance of diversity, equity and inclusion in the workplace has been gaining recognition in recent years. This seminar will look at examples of how players in the nonwovens industry are addressing these challenges to ensure both diversity within their own workplace, as well as within their respective supply chains. There will be a focus on gender equity, including tackling the gender bias around the role that women can play in manufacturing and the importance of attracting women and girls to careers in STEM.

13:30-14:30 **Mobility**

Speakers include: *Ian Dowdle - Sales / Operations leadership - Hollingsworth & Vose.*

Siddharth Shukla - PhD Student - Indian Institute of Technology Delhi

Nonwovens are essential for the mobility transition and future energy storage demands with Ian Dowdle, Sales and Operations leadership - Hollingsworth & Vose

15:00-16:00 **Nonwovens Tutorial**

Marines Lagemaat - Scientific & Technical Affairs Director – EDANA

Marines Lagemaat, Scientific & Technical Affairs Director – EDANA

This free one-hour nonwovens tutorial is intended for newcomers to the industry, or any interested potential in one or more of their multiple end-uses.



Reifenhäuser

REICOFIL

The Extrusioners



*Meet
us*

INDEX 23
GENEVA, SWITZERLAND
April 18 - 21, 2023
Booth 1531

RF5 Technology

For Next Level Nonwoven Materials You Can Rely On.

The world needs protective cloth, face masks as well as other medical and hygiene products it can rely on. Reason enough to select proven technology for the production of the needed materials. Work with the market leader and become a sought-after supplier of reliable, top-class nonwovens. reicofil.com | medicalsafety-reifenhauser.com/en/

Assessing market developments

The nonwovens market has experienced much change in the last few years. It's been well documented that the Covid-19 pandemic catapulted the industry into temporary extreme growth caused by the demand for nonwoven PPE, face masks and medical garments. However, with rising concern about global warming, the industry spotlight has fallen on sustainability. Since PPE production has calmed post-pandemic, the focus for the industry has been on creating nonwoven products in a more environmentally friendly way.

Manufacturers are using more innovative ecologically friendly materials, fewer chemicals, energy and water. Plus, more sustainable new products and machinery have been launched on the market, such as Oerlikon's hycuTEC hydro-charging solution, which won the FILTRES Innovation Award 2022. The technology offers efficient and simultaneous energy-saving charging of meltblown nonwovens, which enables the filter efficiency to be increased to more than 99.99%, according to Oerlikon. Meltblown producers are also able to achieve potential raw material savings of around 30% as a result of the improved efficiency of the media.

And in terms of materials, a new range of plant-based, low-carbon nonwoven materials was launched by Calgary, Canada-based Roswell Textiles earlier this year (2023). ECOFUSE™ range is designed to provide carbon

offsets and replace incumbent synthetic nonwoven materials with more sustainable and environmentally friendly alternatives. The materials are manufactured by utilising proprietary production technologies that allow for the technical processing of biopolymers. These are just two examples of many.

Recycling

Recycling has also risen up the industry's agenda, since many nonwoven products are single-use. This is being spurred on by incoming legislation, as well as greater consciousness around the circular economy. For instance, as part of the European Union's (EU's) upcoming Strategy for Sustainable and Circular Textiles, the separate collection of textile waste will become mandatory for all EU member states on 1 January 2025, and an extended producer responsibility (EPR) scheme for dealing with the waste is set to be introduced. This poses a great problem for current producers, but also offers opportunity.

There are some current initiatives in place such as Euratex's ReHubs initiative, which plans to pursue fibre-to-fibre recycling for 2.5m tons of textile waste by 2030. Currently, however, the only recycling infrastructure in place is for mechanical tearing and the conversion of textile waste either into nonwovens or into regenerated yarns for spinning, reports Adrian Wilson for WTiN. Both options, it

should be pointed out, may give the waste a second life, but cannot in many instances be considered truly circular options.

One exception is the new Renewcell plant in Sundsvall, Sweden, which successfully produced its first fibre material with the ADuro textile fibre preparation system from Andritz at the end of October 2022.

Digitalisation

The other developments in the industry are centred around digitalisation. Through this, the industry can become more sustainable with upgraded technology and more efficient processes. For example, A.Celli Nonwovens, headquartered in Porcari, Italy, has a range of post-production preparation technologies for finished nonwovens for absorbent hygiene products (AHPs) and medical industries. This includes the company's latest Automated Storage and Retrieval System (ASRS), which is designed to bring a new level of flexibility and efficiency to plant operations.

Digitalisation is expected to continue to penetrate the nonwovens industry as demands on the market become greater and production continues to grow in Europe. This latter point is something we expect to see, given the current rising tensions between Europe, the US and China, as well as volatile shopping costs and the trend towards lowering carbon emissions.

Into the future

At INDEX™23, held in Geneva, Switzerland between 18-21 April, 2023, Oerlikon Nonwoven – a provider of comprehensive polymer processing plant solutions and high-precision flow control component equipment – will be presenting its product portfolio for nonwovens applications for numerous technical, hygiene and medical solutions. These will focus on sustainability, quality and efficiency. Exhibition attendees will be able to meet the nonwovens experts at stand 2314 and take a closer look at the hycuTEC charging unit, the current holder of the FILTREX Innovation Award, among other things, according to the company.

“When developing our

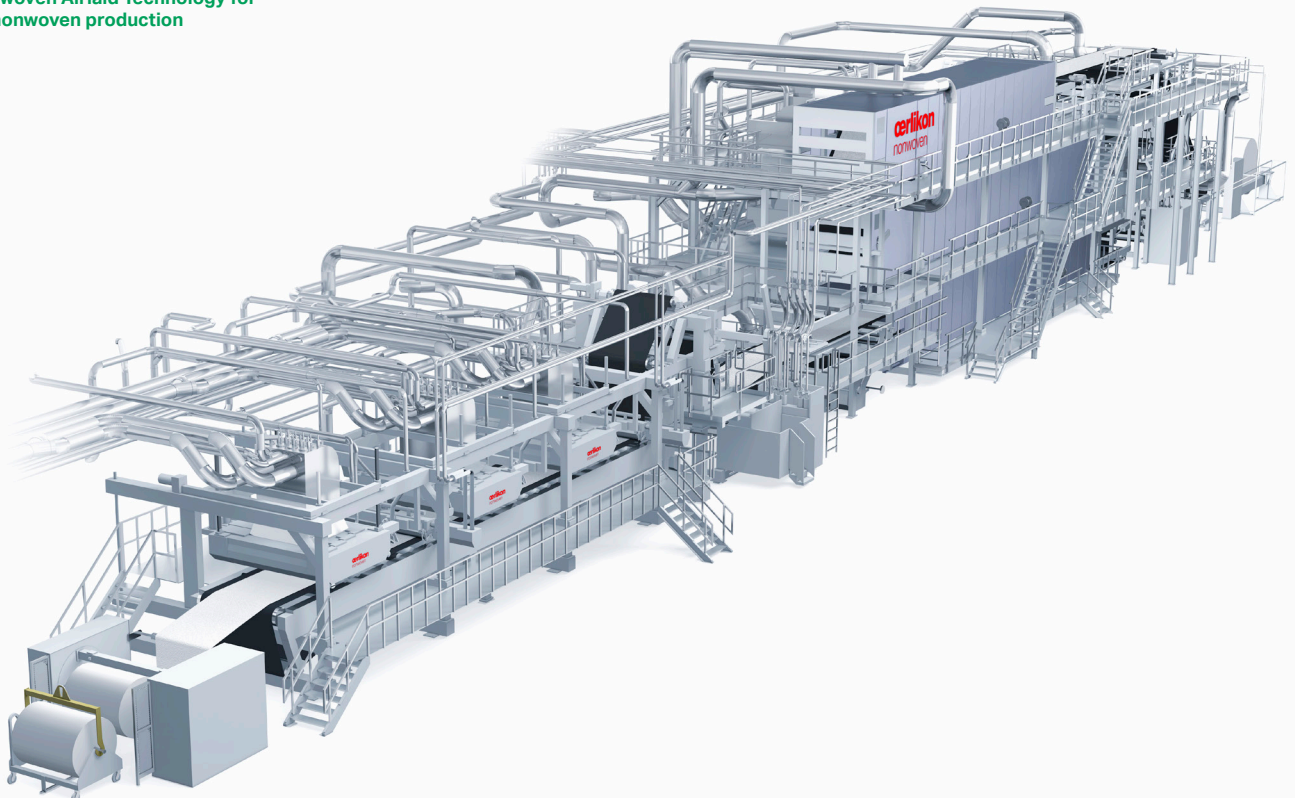
technologies, we not only focus on system efficiency and product quality, but also on sustainability, energy efficiency and preserving resources,” explains Dr Ingo Mählmann, Vice President Sales & Marketing at Oerlikon Nonwoven. Our declared objective is to be the leading partner for manufacturing sustainable and environmentally-friendly solutions in the nonwovens industry. “There are many future-oriented bio-based and biodegradable polymers that can be used to produce nonwovens,” adds Ingo Mählmann. “Here, we want to support our customers in becoming pioneers in processing such polymers.” Alternatives to the standard polymers used widespread

today are required and Oerlikon Nonwoven is able to offer the competence and the technologies for processing these new polymers, the company continues.

Bio-based polylactic acid nonwovens

Also, the bio-based polymer PLA (polylactic acid) may be an alternative for those wanting to manufacture sustainable nonwovens. And the Oerlikon Nonwoven meltblown and spunbond technologies are ideally suited for processing PLA, for example. At INDEX™, the company will be showcasing a sample application: medical oronasal masks manufactured entirely from PLA nonwovens.

Oerlikon Nonwoven Airlaid Technology for sustainable nonwoven production



Preserving resources with the hycuTEC

In the case of its hycuTEC hydro-charging solution, winner of the FILTREX Innovation Award 2022, Oerlikon Nonwoven offers a technology for the efficient and simultaneously energy-saving charging of meltblown nonwovens. This enables the filter efficiency to be increased to more than 99.99%, says Oerlikon.

This innovative technology is able to dispense with an additional drying process when manufacturing most highly-separating electret filter media, allowing considerable savings in the consumption of water and, above all, the energy required for drying. In turn, this ensures very low energy consumption both in the manufacturing process itself and across the entire lifespan of the hycuTEC filter media – used in ventilation and air-conditioning equipment, for example. Furthermore, meltblown producers are able to achieve potential raw material savings of around 30% as a result of the improved efficiency of the media. In other words: the same or even superior performance for lower media running metre weights. As a result, the

With the Phantom technology, wipes can be produced “plastic-free”

hycuTEC technology is a particularly future-proof, resource-friendly technology, adds Oerlikon.

Ecological wipe manufacture with the Phantom technology

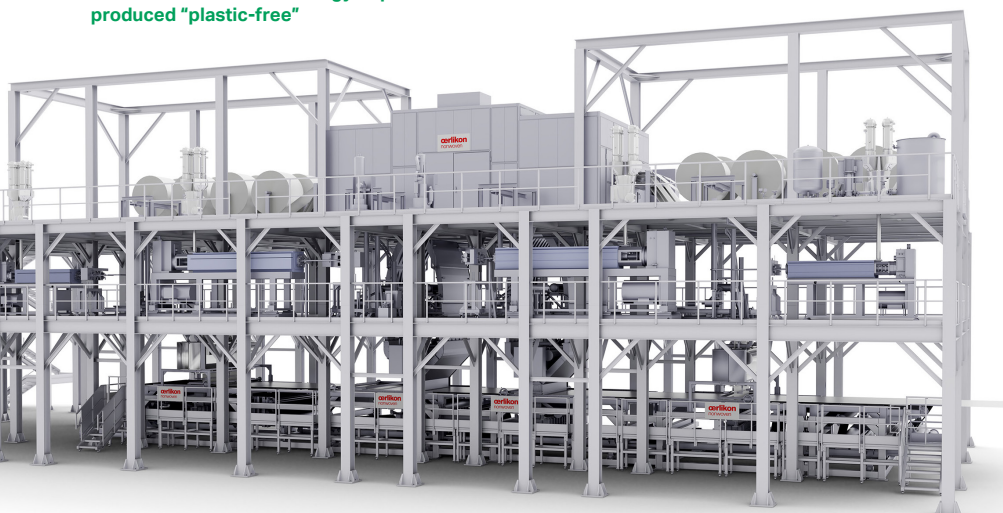
With its Phantom technology, Oerlikon Nonwoven offers an innovative co-form technology for manufacturing wipes – including wet wipes made from pulp and polymer fibres, for instance. Here, the properties of pulp and polymer are combined in a manner that perfectly unites the properties of the starting materials. The material mix can comprise up to 90% cellulose fibres, which is a renewable raw material. Choosing a bio-based and biodegradable polymer enables the entire wipe to be manufactured in a “plastic-free” way.

Compared to conventional processes such as spunlace (hydroentangled carded nonwovens), the patented Phantom technology offers ecological, performance and cost advantages, says Oerlikon. These are both in the application and in the manufacture: dispensing with hydroentanglement renders

subsequent drying of the material redundant, therefore saving on the energy required for drying. Product parameters, such as softness, tenacity, dirt absorption and liquid absorption, can be optimised by means of the recipe and the process settings. The Phantom technology enables the manufacture of both flexible and absorbent structures and highly-textured materials.

Airlaid technology: sustainable nonwovens made from pulp

Pulp or cellulose fibres as raw material for manufacturing nonwovens are currently virtually unrivaled with regards to sustainability and environmental compatibility. The Oerlikon Nonwoven airlaid process is the ideal solution for processing this raw material into high-end products for a wide range of applications, says the company. Today, there is huge demand for manufacturing solutions for high-quality, lightweight airlaid nonwovens with economically-attractive production speeds and system throughputs. Here, the patented Oerlikon Nonwoven formation process, which has proven itself in numerous production systems, is setting standards for homogeneous fibre laying and superb evenness even for nonwovens with low running meter weights. Whether as a system exclusively for airlaid nonwovens or combined with other nonwoven processes, the benefits of the Oerlikon Nonwoven airlaid technology are today already being deployed in numerous applications, the company adds.



Using trends to innovate

Markus Müller, Vice President Sales and Marketing at Reifenhäuser Group, discusses the company's new innovation and other digital solutions set to aid the nonwovens industry



Markus Müller Vice President Sales and Marketing at Reifenhäuser Group

Q: What is Reifenhäuser exhibiting at INDEX™?

A: For the first time we are presenting our new Reicofil 5 (RF5) XHL (extra high loft) production platform. RF5 XHL is the evolution of our technology – targeted at super soft and drapable nonwovens for the hygiene industry. Due to highly crimping fibres and further reduced fibre size, our XHL nonwovens offer a new level of quality with super soft touch for nonwoven products made from them.

In addition, we will present a number of digital solutions, not only for the RF5 XHL, but also for older lines.

Q: How does Reifenhäuser plan to enhance sustainability and reduce carbon emissions and that of its customers) through its technology?

A: All our RF5 lines are equipped with energy-efficient components, enabling resource-saving nonwoven production at high line speeds. To reduce production waste to a minimum, all High Loft products are made only of polypropylene (PP) – for simple and efficient inline recycling. Unlike common mixed-material fabrics made of PP/PE (polyethylene) or PET/PE (polyethylene terephthalate) which are very difficult to recycle.

RF5 lines also process bio-based raw materials on request. Here the challenge lies in the availability of such materials as our technology is ready.

Q: What are the current market challenges and how is the company overcoming them?

A: One major challenge lies in the digitalisation of a heterogeneous machine park. Our answer to this problem is the c.Hub: the new data connection platform of Reifenhäuser Group. Customers have the possibility to securely network the data of their lines, peripherals as well as enterprise resource planning (ERP) and manufacturing execution systems (MES) via the c.Hub middleware, to store it centrally for easy analysis.

Line operators can increase production efficiency based on data. Coming with various software bundles, c.Hub is offered as an on-premise solution; meaning it can be operated locally and remains under the full data sovereignty of the user. Eventually, this also has an impact on sustainability by increasing the overall efficiency and reducing waste.

Q: What industry trends are you witnessing at the moment?

A: Besides efficiency and quality, the big trend continues to be sustainability – both in terms of the production line as well as the end product. The aim is to save every gram of carbon where possible; that is why our new RF5 technology precisely combines these aspects like no other system on the

market. It uses minimum raw material and energy consumption but provides maximum quality.

Q: Since INDEX™20, what have been Reifenhäuser's biggest success stories and innovations?

A: Our biggest success story, potentially ever, was the capability of our company to serve dozens of new and existing customers worldwide during the [Covid-19] pandemic, with new lines to cater to the sudden huge demand of personal protective equipment (PPE). And we did all this despite the supply chain issues and restrictions causing long wait-times.

We turned our company upside down to achieve this and that makes me proud of our team.

Q: Moving forward, what plans does the company have to develop other innovative products and how do you plan to remain competitive?

A: We will further optimise our existing products, with an ever-clear focus on market demands such as loft- and softness as well as sustainability. But as always, we are also looking at products outside of the traditional hygiene and medical markets – such as the spinning of ceramics. We cannot talk openly about everything we are doing but stay tuned.

Discover Geneva

From foodies to thrill seekers, hikers and those who prefer to keep it mellow, the city has so much to offer. From the moment you descend into Geneva airport, the Jet d'Eau is visible from the air – the enormous water fountain in Lake Geneva spouts 140m into the atmosphere. The landmark was created in the late 19th century as an energy source to power machinery driving the city's booming industry and trades and has since become an iconic symbol of Geneva. You'll also be able to take in the exceptional views of Mont Blanc, Lake Lemman, the Jura mountains and the Alps.

The city itself is interweaved with history and culture. Geneva's picturesque Old Town, or *Vieille Ville*, is a tourism hot spot boasting the preserved buildings of old Geneva among the modernity of the restaurants, bars and pubs.

Just a 20-minute taxi from the exhibition centre, you will find the Grand-Rue – filled with cafés, antique shops, libraries, art galleries and an 850-year-old cathedral.

Between the world-renowned Swiss chocolate and traditional cheeses, you'll be spoilt for choice when it comes to food. Enjoying Geneva's restaurants and bars is part of the fabric of the city so you can form important business partnerships over a dish of *filets de perche* and a glass of local *chasselas* or two. Only a 15-minute tram ride away, the city also houses an Italianate suburb that sees fewer tourists than the Old Town. Carouge was developed by the Italians from Turin in the 18th century, as such the architecture is reminiscent of Northern Italy, with shades of red showering the area through stone archways, painted shutters and coloured roofs.

If relaxing and wellness is more your thing, you can recharge at one of Geneva's many world-class spas, such as the *Bains des Pâquis*. The 1930s public swimming baths are set on Lake Geneva and perfect for a sauna during the colder months, a massage to de-stress or a cheaper lunch if you're after a more casual surrounding.

The thrill-seekers among you: Geneva is just close to numerous ski resorts in both Switzerland and France, so you can be there and back in just one day. French resorts like *Samoëns*, *La Clusaz* and *Chamonix* are just an hour away while *St Cergue*, in the Swiss Jura, are even closer. Spend the day hiking, paragliding, mountain biking or if skiing isn't for you, cast them down and head into the snow for a spot of snowshoeing, sledging or even just sightseeing.



Bars and Restaurants

Among the beautiful sights of Geneva, there are hidden gems for unmissable food. From the oldest bistro in Geneva to a rooftop bar-turned-club come nightfall, the city has something to offer everyone and everyone.

Café du Soleil

One of the oldest bistros in Geneva, this cosy spot has a reputation for having the best cheese fondue you'll ever eat. They say a little manufacturing secret and know-how paired with the careful selection of an exceptional Gruyère cheese is the secret ingredient. It's menu features gluten free and vegetarian items.

Location: Pl. du Petit-Saconnex 6, 1209 Genève, Switzerland
Contact: reservation@cafedusoleil.ch

L'Olivo

If you fancy something a little bit more upscale, then head to L'Olivo at the Hilton Geneva. The European cuisine includes Mediterranean, Italian and Swiss dishes. There are also vegan, vegetarian, gluten and dairy free options available.

Location: Rte François-Peyrot 34, 1218 Le Grand-Saconnex, Switzerland
Contact: +41 22 747 04 00

Kytaly

This five-star rated Italian restaurant offers traditional dishes, simple recipes and delicious cocktails. The open kitchen and pizzeria are next to the seating area so you can watch the chefs work their magic. There are vegetarian and vegan options available.

Location: Bd Georges-Favon 12, 1204 Genève, Switzerland
Contact: +41 22 320 17 25

Chez Fouad

A unique, Lebanese experience of cuisine that smells of good sun and spices. Indeed, all ingredients are directly imported from Lebanon. On the table, dishes come in a multitude of small plates, cold or hot.

Location: Av. Pictet-de-Rochement 7, 1207 Genève
Contact: +41 22 700 99 76

Fiskebar

A local fusion of Nordic flavours, this venue pushes the boundaries of Scandinavian-inspired seasonal dishes. It offers lakeside casual dining in a sophisticated backdrop.

Location: Ritz-Carlton Hotel de La Paix, 11, Quai du Mont-blanc, 1202 Genève
Contact: +41 22 909 60 71

Roi Ubu

If you believe the rumours, this is the oldest pub in Geneva. Laced with history and character, the pub hosts outdoor seating so you can take in the local scenery and a large drink selection.

Location: Grand-Rue 30, 1204 Genève
Contact: +41 22 310 73 98

Rooftop 42

Grab a drink with the best view in Geneva. Found in the centre of the city, the rooftop restaurant and bar sits in an exceptional spot that boasts a breathtakingly beautiful view of the harbour. As night, the venue turns into a club where singers, artists and DJ's entertain until 2:00am from Tuesday to Saturday.

Location: Rue du Rhône 42, 1204 Genève
Contact: +41 22 346 77 00



ENJOY!



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