Integrated solutions for green and efficient airports.

Answers.
The "green and efficient airport" of the future is about much more than optimizing individual parts of the airport. Siemens can help design architecture, technology, and logistics for environmental compatibility. Our products and systems incorporate ecological concerns – featuring environmentally compatible, health-friendly, recyclable materials and low resource consumption.
With air travel expected to quickly recover its former growth rates, airports are facing several challenges: handling the increasing number of passengers, freight, and baggage in an efficient and cost-effective way as well as creating environmentally friendly solutions and products, plus satisfying the rising security standards required worldwide.

Our efficient and green solutions mean airports and airlines are optimally prepared for an economically successful and green future. Siemens is one of the few companies in the world to offer a comprehensive green portfolio of products, solutions, and services for all airport-related processes. Our experience and expertise lie in the areas of efficient baggage and freight handling, passenger information services, green airport consultancy, safety and building management systems, transportation equipment, energy efficiency, operations, and maintenance. Installing energy-efficient solutions will enable airports to grow on a CO2-neutral base. The CO2 reductions from our individual solutions can range from 10% to 100% through the use of renewable energies.

"Transportation emerges as the top megacity infrastructure challenge by a large margin. It is the one infrastructure area that stakeholders believe has the biggest impact on city competitiveness."

(from the study Megacity Challenges, Globe Scan/MRC McLean Hazel, 2006)
“We choose Siemens not only because it brings leading-edge communication technology, but also because Siemens has a lot of proven success cases in global airport private network market.”

“With the renovated system installed, we are looking forward to significantly enhancing the efficiency of the airport dispatching system, which will allow Eastern Airlines to provide safer and superior service to our passengers.”

(Li Fenghua, President of Eastern Airlines)

There’s no question that in a world of open borders and global connections, mobility is a megatrend. Air travel and transport are benefiting from this rapid development like no other mode of transportation.

Your challenge, then, is to manage this growth efficiently, securely, and safely and in a way that is compatible with the environment. Your challenge is to bring your airport’s entire infrastructure up to world-class standards and keep it there – from take-off and landing through ticketing, from the safety and security of passengers and equipment to energy management and ground transportation. These are complex tasks that demand integrated solutions. Let’s join forces to meet these challenges. Siemens views airports as a whole. We offer innovative solutions that work together smoothly for every part of your airport – for your entire airport. Siemens will support you with a comprehensive approach to the growing demands on your airport. Isn’t that exactly what you need?
What are the needs of airports in the future?

Integrated solutions to complex challenges

Siemens is the only company worldwide with the expertise to equip complete airports from top to bottom. You can count on an integrated package from consulting to implementation to service. We bring two key characteristics to our work: a deep understanding of your airport’s complex processes, and a strong commitment to create an efficient, attractive, sustainable infrastructure.
Green airports – from environmental commitment to efficiency and vice versa

Nearly every form of mobility has an impact on the environment. The air transportation industry is undertaking great efforts to reduce its contribution to CO₂ emissions and global warming. Efficiency-optimized solutions become a more and more vital aspect of competitiveness. Siemens helps you to be among the leaders in this field.
What moves you?
Environmental responsibility and efficiency are also important infrastructure issues. We want to make “green airports” a reality in every respect – from building to logistics and transport to energy supply. Some airports have already begun to examine and optimize all of their processes with respect to their environmental impact. Environmental compatibility goes hand in hand with competitiveness. Saving resources like energy, fossil fuels, and water means saving money – on a massive scale.

What can you expect from us?
Siemens offers expertise and consulting as well as the technologies you need to make your processes environmentally compatible – from many different angles. Our cutting-edge drive systems help save energy on conveyor belts and escalators. Our innovative solutions for building illumination significantly reduce power requirements. Our intelligent building technology ensures optimal control of temperatures, lighting, and ventilation. But the “green airport” is about much more than optimizing the various individual parts of the airport. We also help you design the architecture, technology, and logistics holistically for environmental compatibility. And naturally, our products and systems take ecological concerns into account.

“We tagged Siemens because we wanted a partner who was equally committed to improving the environment by pursuing ‘green’ building and operational technologies.”
(Richard Potosnak, President of Aviation and Capital Management, Indianapolis International Airport, Indiana, USA)

By the way...
Siemens equipped Indianapolis International Airport with a new baggage handling system and an integrated security screening system – both of which meet high environmental standards and help make Indianapolis one of the first airports in the U.S. to gain LEED (Leadership in Energy and Environmental Design) certification.
What moves you?
In theory, the productivity of an airport depends on a single equation: throughput per time. In practice, there are many more parameters: increasing flight frequencies, higher passenger throughput, more baggage and freight — all of which needs to be transported faster and more securely to optimize the cost of ownership. This places high demands on infrastructure, information, and logistics. Combined with growing security requirements, it makes for some real challenges to the desirability and economic viability of an airport.

What can you expect from us?
At Siemens, we take a comprehensive approach to airport infrastructure and offer you integrated solutions that incorporate all relevant aspects. That’s because we know long-term optimization can only be achieved if all of your passenger and freight traffic moves smoothly — from the arrival at the airport to boarding/loading and vice versa. You have to be able to guarantee quick, accurate transport for your freight customers and the utmost comfort and convenience with minimum connecting times (MCT) for your passengers.

As the global leader in airport logistics, we not only precisely define what needs to be done, we also do what needs to be done — down to the last detail, from check-in, ticketing and scanning solutions to information and communication technology. The spectrum is completed by sorting and transport systems and the associated logistics. We use semiautomated and fully automated systems and IT solutions to speed up the sorting process, with conventional barcode and increasing use of RFID technology to help reduce the risk of baggage and cargo missorting. In short, we enable you to boost throughput, minimize wait and loading times, and increase security.

The Siemens high-speed tray system used in our conveyor systems achieves speeds of up to 12 m/s, and it can handle 56,500 pieces of baggage per hour. Time it for yourself in Madrid, Dubai, Beijing, and Incheon (Korea).

And there’s good reason why we’re so fast: We’ve already installed some 6,000 logistics systems worldwide and more than 300 of those were specially designed for airports.

By the way...
The well-known Siemens Tray System has reached the next evolutionary stage with the launch of the Sibag Cross, the cross belt tray from Siemens.

This hybrid design
– combines the safe transport of a tray mold with the handover precision of a cross belt
– combines belt and tray conveyor technology
– combines existing technology and new features
– combines the well-proven Sibag Tray with new components
– combines operational needs and highest flexibility.

The cross belt tray conveyor system has been developed and enhanced by Siemens engineers based on the standard tray system, which has been in operation in a number of baggage handling systems for many years.
What is productivity really about?

Increasing throughput means controlling logistics

These days, the maximum time allowed for unloading and completely reloading a plane is around 45 minutes. That’s not much time. But in the future, you’ll have even less time to effectively meet growing passenger demands and cargo volumes. You’ll need a system – and experience with logistics.
Keeping airport technology on the safe side

What moves you?
Security, comfort, and convenience for passengers are the yardsticks against which every airport is measured. However, protecting buildings and equipment and operating them efficiently are also critical to an airport’s viability. Should an incident occur, there must be a rapid intervention. Threats have to be identified early and eliminated reliably, affecting as few passengers as possible – and it’s preferable to prevent incidents before they occur. Whether it’s a suspicious bag, a column of smoke, or unauthorized access – all processes must work together to ensure an appropriate level of response. Of course, even the processes involved in routine checks and daily operations have to be well-integrated if the growing numbers of passengers and bags are to be handled safely and effectively.

What can you expect from us?
Command and control systems from Siemens look at the demands of an airport as a whole – from the airfield to the terminal, from security equipment to building technology, from fire safety to baggage scanning. And then we build intelligent solutions that protect passengers, equipment, and the entire infrastructure.

Preventive measures like video surveillance, intruder alarms, access control, biometric identification, and X-ray systems are as much a part of these solutions as fire safety, extinguishing systems, and evacuation systems. Of course, all data are merged in a clear manner, analyzed, and displayed in conjunction with the consequences of possible actions so that security management can act quickly and appropriately in the event of a crisis.

Our integrated approach also applies to our core expertise in the field of airport building technology for the utmost in comfort, convenience, and efficient energy management. We ensure a pleasant indoor climate for passengers and staff – without breaking your airport’s bank. With our solutions, heating, ventilation, and air conditioning use only as much energy as is absolutely necessary. We work together with operators to optimize energy usage throughout all the highest energy usage areas. Thus, you will benefit from real cost savings.

This trend toward increased efficiency will continue, particularly since airports need to be economically sustainable, irrespective of their size, by 2030 – which will require improved operational processes and intelligent energy management systems.

By the way...
Our security and safety solutions even extend into the airplanes themselves. The new A380 contains an extremely fool-proof fire detection solution from Siemens that reliably monitors the avionics and the cargo hold.
What can you expect from us?
We develop and incorporate innovations that make sense for your airport. For passengers, the Siemens Passenger Services Suite provides the closest possible relationship between management and your most valuable customers: with check-in online via mobile phone or PDA, dynamic location and time trigger-based flight status and service information available at any time, intelligent parking systems that make arrival at the airport easy, an information system that directs passengers straight to the gate, common-use passenger processing systems, and self-service check-in kiosks with fully or semiautomated baggage checks. While waiting times are being reduced with biometrically supported identity and border control, passengers can get the latest information about their flights from an intelligent flight information display system and public announcement system, and use their idle time for some convenient shopping or dining at attractive revenue-optimized terminals.

Throughout the entire system, IT solutions like the Airport Integration Platform ensure that the necessary exchange of information is handled in the fastest and most accurate and flexible manner while the Airport Security & Operations Center supports the interpretation of data quickly and securely in the background. The system combines information and data gathered from relevant safety and security systems (such as fire alarms, intrusion detection, CCTV, access control, etc.) and from operations systems. In most cases, these data will be displayed and stored in an airport operational database alongside with flight and resource management and passenger processing systems, to provide a continuously updated view of the current status of the airport at any time.

For you, the airport operator, that means speedier processes – which translate into higher satisfaction rates among passengers, even higher levels of security, lower costs, and increased revenues to give you a competitive edge in a highly dynamic environment.

Maintaining this competitive edge – not just in terms of processes but also in the cost of service provision and the quality and reliability of services – is the ultimate goal of our maintenance and I&C operations services. And these services are available on a global scale, from individualized business, process, and IT consulting offerings to full-service data center operations and outsourcing models.
Where can I find the flexibility that a complete airport needs?

Turnkey solutions – choose your solution from the world’s broadest portfolio

Growth requires mobility. This is even the more true if there is insufficient infrastructure or – as in greenfield projects – no infrastructure at all. For example, in Bengaluru Siemens was commissioned to build a new airport for India’s IT capital and biotechnology hub. We supplied all technical systems from airfield lighting to baggage handling and security, and also delivered a timely completion in 2008.
What moves you?
How can you ensure that large-scale projects run smoothly and finish on schedule? How can existing systems be upgraded to meet the challenges of tomorrow without interrupting operations? Your best bet is a partner who has in-depth knowledge of all of the areas involved. A partner that has proven its technical and organizational skills time and again. A partner with the flexibility to combine a wide range of requirements under a common umbrella to build a consistent solution. In short: a partner like Siemens.

What can you expect from us?
In a word: flexibility. In everything from the big picture to the smallest detail, in both individual solutions and turnkey airport projects. This starts with energy-saving drives and “plug & play” baggage handling system upgrades and extends to systems to maximize energy efficiency as well as general planning and financing. Thanks to our decades of experience, we can add to or upgrade any system. Let us help you expand your existing infrastructure and add capacity today to handle the challenges of tomorrow.

Complete terminals for a limited time
Part of our service portfolio is CapacityPlus – a complete temporary airport terminal. With CapacityPlus, Siemens supplies everything needed for an airport passenger terminal: check-in counters, safety systems for baggage and passengers, a complete baggage handling system, as well as all required facilities and auxiliary systems. These terminals can be set up either in existing buildings or in temporary, lightweight structures such as tents. This allows optimal management of temporary passenger peaks without having to permanently expand airport capacity. And it offers airport operators and airlines an unmatched flexibility in handling trade fairs, sporting occasions, and other temporary large-scale events.
What moves you?
Different times bring different needs. The changes that have taken place in air travel demand new concepts and new technologies. But what does the future really look like? How will the airport of tomorrow operate? How can you visualize what you’ve till now only read about, and be certain that you’re choosing the right investment? The best way is to experience it all live, in a virtual airport that is also very real...

What can you expect from us?
We wanted to do more than just describe our solutions and innovative expertise to our customers – we wanted to show them. Since Siemens can offer all the components needed to operate an airport, it quickly became clear how we could show them – by building a complete airport where visitors can experience integrated systems and solutions live: Siemens Airport Center.

As soon as you arrive at the “airport,” the latest parking guidance systems show you the way to the future. Normally, the first place you go to after parking is the check-in counter. But we’ll show you how easy it could be to check in via your mobile phone. Security screening begins as soon as you arrive inside the “terminal.” A fingerprint or 3D face-recognition scanner records and compares your biometric data, which can also be used to increase security and speed processing at the gate. In addition, you can experience how efficient and secure baggage handling and screening systems can be if they’re equipped with state-of-the-art Siemens technology.

In the Airport Center’s control center, we show you – in action – how it is possible to bundle the various control rooms of an airport into a single vantage point and to centrally monitor all core processes via networked airport execution systems (AES).

Beyond these demonstrations, the Airport Center also serves as a center for training employees to operate our systems. We’ve also integrated a test field where we test our customers’ systems in depth prior to delivery, and an innovation laboratory where we perfect our latest developments – mostly behind closed doors. Many customers have already visited and remarked that the Siemens Airport Center is definitely worth the trip.

By the way...
We promise our customers the implementation of turnkey airport solutions in the shortest time possible. We even lived up to this promise in our own venue – from planning to the completion stage, it took only eight months to turn a warehouse into the 9,000-square-meter Siemens Airport Center.
Where are green and efficient airports born?
The information provided in this brochure contains merely general descriptions or characteristics of performance which in actual case of use do not always apply as described or which may change as a result of further development of the products. An obligation to provide the respective characteristics shall only exist if expressly agreed in the terms of contract.

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