

# Network, capacity and security

Our network is the core of who we are as an airport company and underpins our mission of Connecting the Netherlands. Together with our regional airports and other assets, the Schiphol hub is a vital engine for economic prosperity, employment and tourism in the Netherlands and the wider European region. This section of our results draws together our key strategic themes of Top Connectivity and Excellent Visit Value, which underpin the many different activities of Royal Schiphol Group, and specifically those of Schiphol's Aviation business area and our capital investment programme.

Following the rapid growth of our operations in recent years, capacity constraints are having an increasing impact on our Group's performance. In particular, the restrictions on air traffic movements at Schiphol have seen congestion emerge as a key challenge across different areas of our operations. While our passenger volume continued to rise in 2018, we saw signs of how our market position may be affected by Schiphol's air traffic ceiling in the years to come.

Expanding our physical capacity must remain a long-term objective in order to safeguard our mission, the quality of our processes and services, and Schiphol's hub position. However, it is

imperative that we carry out these developments safely and responsibly: ensuring the safety and security of our passengers, visitors and employees is always our top priority.

## Network of destinations

In 2018, Amsterdam Airport Schiphol welcomed 71.1 million passengers (up 3.7%). Air traffic within Europe decreased to 70.4% of the total passenger volume (2017: 71.1%). In absolute terms, the United Kingdom (2.6%), Germany (5.9%) and Poland (23.2%) accounted for the largest volume of European traffic.

The total number of passengers to Schengen destinations grew by 2.6% (2017: 9.1%). Meanwhile, passenger volumes outside Europe saw significant growth, particularly to destinations in North America (up 9.1%). African volumes also continued to grow (7.2%), thanks to increased frequencies to Mauritius and a strong increase in passenger numbers to Egypt, South Africa, Ghana and Morocco.



Transfer traffic increased by 2.6%, bringing the total number of transfer passengers to 25.3 million. The share of the total number of transfer passengers fell from 37.0% to 36.6% due to the increase in O&D passengers in Europe.

### Development of Schiphol's market share in 2018

Schiphol's market share for O&D passengers in its catchment area rose from 34.1% to 34.4%; however, its market share within the European top ten decreased from 11.9% to 11.7%. Schiphol maintained third position behind London Heathrow and Paris Charles de Gaulle; Moscow Sheremetyevo entered the European top ten airports with the highest growth (+14.3%).

Despite experiencing a decrease in market share for cargo, from 13.6% to 13.1%, Schiphol retained its third position behind Frankfurt and Paris Charles de Gaulle.

### Development of Schiphol's market share in 2018

(in millions of passengers, excluding transit direct)

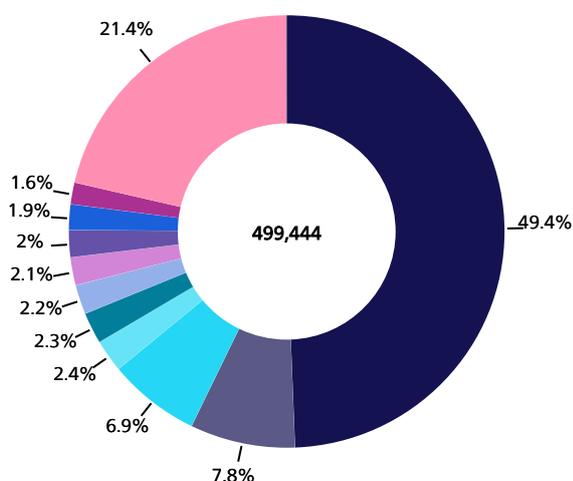
|               |      | Growth | Market share |
|---------------|------|--------|--------------|
| London LHR    | 80.1 | 2.7%   | 13.2%        |
| Paris CDG     | 72.2 | 4.0%   | 11.9%        |
| Amsterdam AMS | 71.0 | 3.7%   | 11.7%        |
| Frankfurt FRA | 69.4 | 7.8%   | 11.4%        |
| Istanbul IST  | 68.2 | 6.7%   | 11.2%        |
| Madrid MAD    | 57.8 | 8.5%   | 9.5%         |
| Barcelona BCN | 50.1 | 6.2%   | 8.3%         |
| London LGW    | 46.2 | 1.4%   | 7.6%         |
| Munich MUC    | 46.1 | 3.3%   | 7.6%         |
| Moscow SVO    | 45.8 | 14.3%  | 7.5%         |

### Network development

Schiphol connects the Netherlands to the rest of the world. We aim to connect the Netherlands to more than 300 direct destinations. Given the current cap on air traffic movements, going forward, further network development will only be possible where existing frequencies have been reduced or discontinued. In 2018, Schiphol was able to offer a total of 327 network destinations.

The 327 direct destinations in 98 countries are served by a total of 108 airlines. Of these destinations, 135 are intercontinental (2017: 132). KLM and its codeshare partners served 212 destinations, equal to 2017.

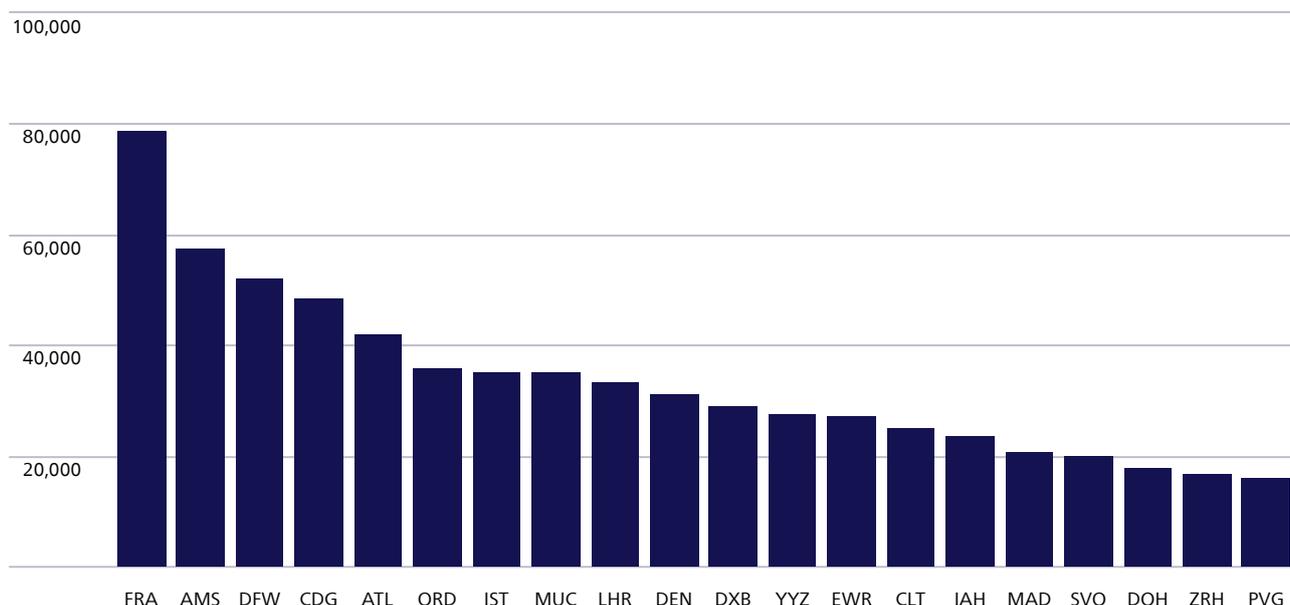
### Air transport movements at Schiphol in 2018



|                 |         |
|-----------------|---------|
| KLM             | 246,751 |
| easyJet         | 38,882  |
| Transavia       | 34,233  |
| Delta Air Lines | 12,025  |
| Flybe           | 11,717  |
| British Airways | 11,034  |
| Vueling         | 10,472  |
| Air France      | 10,062  |
| TUIfly          | 9,574   |
| Lufthansa       | 8,031   |
| Other           | 106,663 |

## Hub connectivity worldwide 2018

Number of transfer connections per week



2018 saw a number of changes within our portfolio of destinations. On balance, we were able to strengthen our long-haul network - for both cargo and passengers - over the year. In particular, we are pleased to note the further development of Schiphol's intercontinental network with the addition of seven new cities. These include three new African destinations in Mombasa, Enfidha and Upington (full freighter only); Beirut and Eilat's Ovda Airport in the Middle East; as well as two locations on the American continent in Fortaleza and Orlando. Within Europe, our priority remained the addition of key hub-destinations, and we now are connected to a new capital city: Ankara. Four intercontinental routes were discontinued in 2018, together with ten intra-European routes, of which three were full freighter-only routes.

Effective from 2018, a passenger destination is strictly defined as an airline carrying at least ten passengers on a flight between Schiphol and the destination in question for at least eight weeks in a row. Full freighter destinations are now defined as examples of more than 100,000 kilogrammes of cargo being shipped to and from a destination during a single year in at least ten frequencies. When applying this new definition to the 2017 count, the number of direct destinations is corrected as 329.

We have retained our position as one of the best-connected aviation hubs in Europe. In 2018, we ranked second in the ACI connectivity European benchmark for direct connectivity (2017: number 1), and held second place for hub connectivity (2017: number 2).

All Dutch airports operated by Royal Schiphol Group are experiencing capacity constraints. Amsterdam Airport Schiphol has reached the agreed limit of 500,000 air transport movements

## Direct connectivity at European airports 2018

| Rank in 2018 | Airport                    | Rank 2017 | Rank 2008 |
|--------------|----------------------------|-----------|-----------|
| 1            | Frankfurt                  | 3         | 3         |
| 2            | Amsterdam Airport Schiphol | 1         | 6         |
| 3            | London Heathrow            | 2         | 2         |
| 4            | Paris CDG                  | 4         | 1         |
| 5            | Istanbul                   | 5         | 18        |
| 6            | Munich                     | 6         | 5         |
| 7            | Madrid                     | 7         | 4         |
| 8            | Barcelona                  | 8         | 8         |
| 9            | Rome FCO                   | 9         | 7         |
| 10           | Moskou SVO                 | 11        | 30        |

per operational year, which was set in 2008 by the Alders agreement. Meanwhile, the regional airports in our Group are also experiencing their own air transport movement limits.

## Optimising the use of slot capacity

In 2018, the market's demand for more capacity at Schiphol led to a clear trend in airlines deploying larger aircraft as alternatives to smaller models. As well as a general increase in aircraft size, there was also a clear rise in seat occupancy rates, with fewer empty seats observed on routes to and from the airport. The combination of larger aircraft and increased seat occupancy resulted in an additional 3.0 seats per passenger air transport movement on average. This added nearly 2.2 million seats to the Amsterdam Airport Schiphol market in 2018, while the average load factor also increased, growing by 0.8 percentage points to 85.8%.

### Quality: Busy days require investment

We strive for excellent operational performance. In 2018, we achieved a Net Promoter Score (NPS) of 32 (2017: 34), which was below our target score of 35 for the year. With an average score of 31, the evaluations of departing passengers remained unchanged from 2017; however, the average scores provided by arriving and transferring passengers both dropped. A key focus going forward will be ensuring high standards for an ever-increasing volume of passengers. During the summer season, there were 37 days when the number of passengers exceeded 225,000, compared with only 16 such days in 2017. This rise underlines the urgent need for increased capacity for terminal processes. To this end, we are currently creating additional capacity in Departure Hall 1 and constructing a new pier and terminal.

Schiphol aims to accommodate all wide-body aircraft at a connected gate located at one of the airport's designated piers. However, due to the increase in wide-body activity, this summer, we made the decision to develop a number of additional remote aircraft-handling locations. This does live up to our quality standards. Due to the scarcity of wide-body aircraft stands, we have decided to set an initial limit for the number of larger aircraft within our Capacity Declaration, with effect from summer 2019. More constraining factors may be necessary in future years if we are to continue offering passengers and airlines a high-quality product.

### Capacity declaration

The capacity declaration sets the respective maximum number of aircraft movements for the summer and winter seasons. This information is provided to the independent slot coordinator. Airport Coordination Netherlands (ACNL) then allocates airport capacity to individual airlines in the form of slots.

The capacity declaration governing aircraft movements at Schiphol is approved via the Operational Schiphol Consultation (OSO). Under this system, senior managers from Schiphol, in addition to representatives from Air Traffic Control the Netherlands, the airlines with a base at Schiphol (KLM, Transavia, Martinair, TUI fly, Corendon Dutch Airlines and easyJet), as well as two interest groups, SAOC and BARIN, convene to agree on the maximum number of air transport movements for the forthcoming winter and summer seasons. Important operational issues or bottlenecks are also discussed. The consultation is chaired by the Schiphol Airport Operations Director, with the Ministry of Infrastructure and Water Management (I&W) and the ACNL regularly sitting in on meetings.

## Wide-body restrictions

Combined with the further growth in market demand for air transport, the limit imposed on air transport movements at Schiphol has led to significant increases in the number of wide-body aircraft movements through Amsterdam Airport Schiphol in recent years.

This challenge reached a critical point in 2018, when the increased presence of larger aircraft resulted in shortages in our wide-body connected handling capacity. Wide-body planes with longer layover times needed to be parked at cargo stands or, on several occasions, at Schiphol-East. This put pressure on Air Traffic Control the Netherlands (LVNL) due to the number of towed runway crossings taking place. During the summer months, between eight and ten aircraft needed to be accommodated at non-connected stands on a daily basis.

Schiphol, in collaboration with other industry stakeholders, recognised the growing volume of traffic at the aircraft stands as a bottleneck requiring better regulation. As such, all parties were in favour of including an additional parameter in the capacity declaration aimed at preventing future shortages in connected and parking stands.

Effective from the 2019 summer season, Schiphol will allow a maximum of 41 arriving wide-body passenger aircraft to land at the airport during the morning peak period (7:20-10:30 LT). This parameter will be reviewed and optimised in time for the following season.



## Slots: 'use it or lose it'

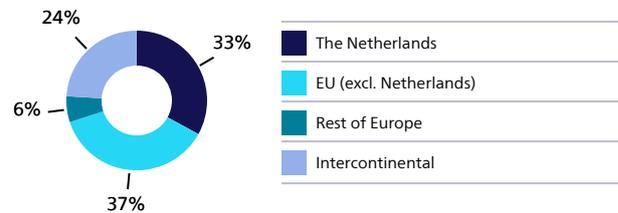
The Stichting Airport Coordination Netherlands (ACNL), the independent slot coordinator, allocates available capacity at our airports in the form of slots. The coordinator allocates the slots twice a year, a few months before the start of the winter and summer seasons. The system works according to the 'use it or lose it' principle.

An airline accrues a historical entitlement when it uses 80% of the allocated slots; it will then automatically be able to use those slots during the following season. In accordance with the rules, any airline not meeting the minimum 80% target loses its historic right to operate those slots the following year.

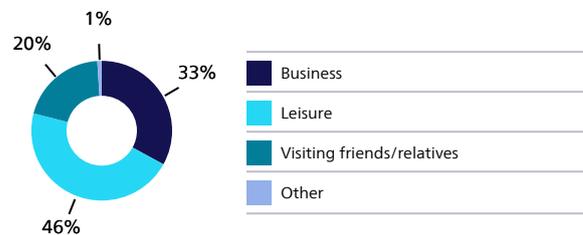
## Passenger volumes at Schiphol in 2018

| Volumes per airline |            | Growth |
|---------------------|------------|--------|
| KLM                 | 34,339,523 | 4.5%   |
| easyJet             | 5,987,542  | 7.8%   |
| Transavia           | 5,298,291  | 0.9%   |
| Delta Air Lines     | 2,921,489  | 3.5%   |
| TUIfly              | 1,880,752  | -4.5%  |
| Vueling             | 1,657,983  | 8.0%   |
| British Airways     | 1,333,359  | 0.5%   |
| Air France          | 1,148,335  | -9.7%  |
| Lufthansa           | 859,506    | 3.3%   |
| Flybe               | 809,991    | 3.6%   |
| Other airlines      | 14,816,376 | 3.5%   |

## Country of residence



## Reason for travelling

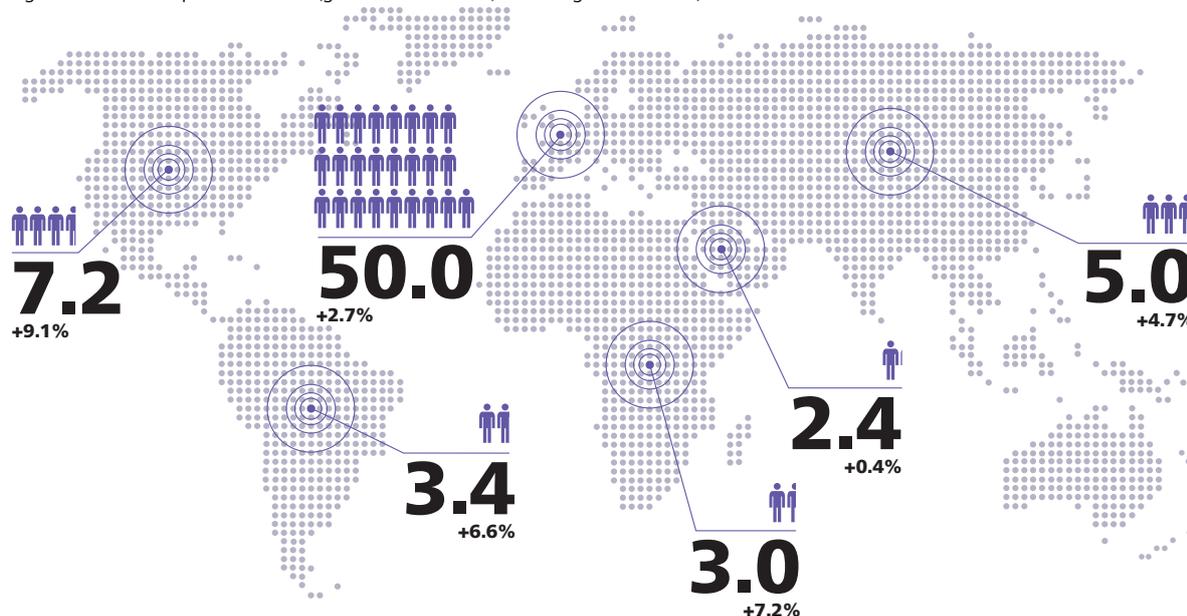


## Top-5 European destinations

| Airport                    | Number of passengers |
|----------------------------|----------------------|
| 1. London Heathrow         | 1,745,757            |
| 2. Barcelona               | 1,418,714            |
| 3. Paris Charles de Gaulle | 1,238,016            |
| 4. Dublin                  | 1,194,651            |
| 5. Copenhagen              | 1,090,783            |

## Passenger volumes and growth by continent

Passenger volume at Schiphol in millions (growth versus 2017; excluding transit direct)



### Top-5 intercontinental destinations

| Airport                | Number of passengers |
|------------------------|----------------------|
| 1. Dubai International | 901,460              |
| 2. New York JFK        | 880,556              |
| 3. Atlanta             | 812,286              |
| 4. Toronto             | 638,314              |
| 5. Detroit             | 621,630              |

### Cargo

In 2018, 56% of the total cargo volume of 1.72 million tonnes at Amsterdam Airport Schiphol was transported in full freighters and 44% via passenger flights.

### Full freighters and slots

In 2018, full freighter operations at Schiphol suffered a significant loss of their historic slot rights. This resulted in a 10.4% decline in full freighter movements. In response, the Coordination Committee Netherlands has proposed a local rule whereby full freighter operations are given certain priority when it comes to distributing slots that are returned in-season. Implementation of the local rule is expected in 2019.

We note that, despite the decrease in full freighter movements, Schiphol's shipped cargo volume declined by a relatively modest 2.5% during the year, having been offset by higher cargo volumes on passenger flights.

### Digitisation of cargo processes

Schiphol has set itself the target of maintaining the airport's current cargo volume. Working with our partners across the cargo

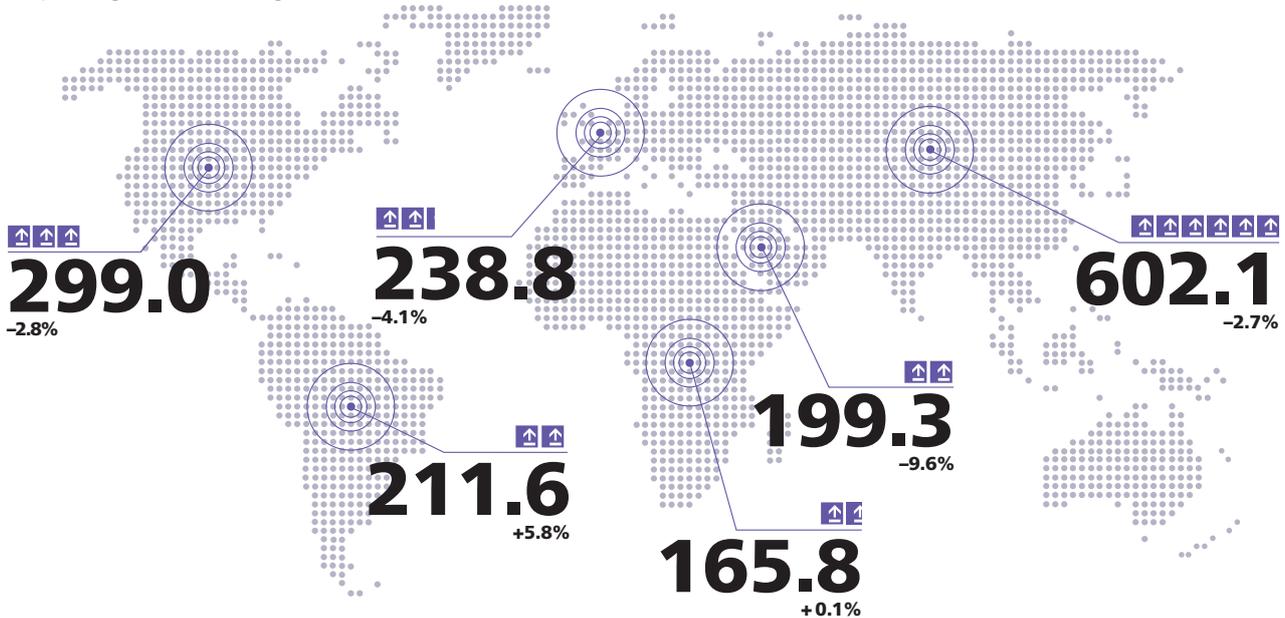
value chain, we have developed the Smart Cargo Mainport Programme (SCMP), with the aim of identifying new ways of improving the flow of cargo through the Schiphol hub. SCMP comprises three pillars: (1) digital information (centrally accessible and fully utilised), (2) landside logistics, and (3) improving the supply chain for flowers, pharmaceuticals and other time- and temperature-sensitive products. All three pillars are underpinned by a transparent system of data exchange.

In 2018, we launched three new innovations, each specifically designed to support one of the respective pillars. The first of these, a trucking app, supports pillar one by giving handlers timely, early-stage information on incoming trucks and cargo, while also allowing them to instruct truckers on when to arrive, or when not to. The goal is to reduce waiting times and enable handlers to manage their resources more efficiently. Our second new cargo innovation is a compliance checker, which makes it possible to correct Air Waybill information at an early stage in accordance with current Customs regulation in the receiving countries. With regard to pillar 3, Schiphol has launched a platform allowing supply chain partners to link critical data on flower shipments to Air Waybill data at the source. Information regarding the number of boxes, flower type and the number of flowers and stems in each box is linked to Air Waybill numbers by the portal. A unique GLN code is then generated, providing all users with access to the data in a centralised location. The platform has been successfully trialled on journeys from Nairobi, Kenya, to Aalsmeer Flower Auction in the Netherlands.

Automated nomination is a further innovation resulting from the SCMP. Instead of manually linking a shipment to an agent, chain partners will be able to perform this task automatically, eliminating unnecessary delays.

## Cargo volumes and growth by continent

Schiphol cargo x 1,000 tonnes (growth versus 2017)



## Airport capacity

As the demand for our services has grown, capacity has become an increasingly critical issue at Schiphol in recent years. We strive to offer our travellers and other visitors an efficient, enjoyable and safe user experience at all times. To ensure these objectives are met, Schiphol Group is undertaking a series of investments and other initiatives aimed at meeting our future capacity needs, both in the immediate future as well as the long term. Our goal is to carry out investment projects and to begin implementing projects relating to the Capital Programme. The latter include various capacity-related projects and initial construction work on the landside roads and new pier. In 2018, construction work on the landside roads and the new pier commenced. We note that not all projects have been realised in accordance with planning, for various reasons.

We will be undertaking major expansion and redevelopment work at the airport over the coming months and years, as we look to add new physical capacity, while also working to improve quality and further optimise our processes.

### Master Plan

A large number of investments are planned, the main ones being our new pier and terminal, the revised landside road infrastructure and the renovation of Departure Hall 1. There are also plans in place to extend the airport's parking facilities.

Taking into account evolving industry and societal trends and developments, we are currently exploring several options for the smart and sustainable development of our airport, both landside

and airside. These spatial developments will be incorporated into a new Master Plan for Schiphol, with a particular focus on the phase to follow the completion of the new pier and terminal. We will, of course, be involving important stakeholders in this process.

Our plans extend further still. The world around us is changing rapidly, and this requires Schiphol to take a proactive, future-focused approach, taking into account key societal issues such as climate change, emissions and, of course, safety and security. Responses to those issues will be detailed in Schiphol's new 'Vision 2050' document, in which we will set out the course we intend to take through to 2050. It will form the basis for Schiphol's spatial development vision and Master Plan. Please consult the Strategy chapter of the annual report for further information on Vision 2050.

### The new pier and terminal

Development of the new pier continued at a steady pace through 2018, building on the groundwork and other preparatory work that took place in 2017. Piling work was completed during the course of the year, and the pier's foundations were subsequently put in place. BN-TAV, a joint venture between Ballast Nedam and TAV Construction, was selected as general contractor for the project. This allowed construction work to begin, starting with the erection of the steel structure of the pier. The pier will become operational next year.

The new pier, which will accommodate large and medium-sized aircraft, will allow a much-needed expansion of our current capacity, enabling us to meet the demand for aircraft stands and gates at Schiphol. Two further stands for large aircraft will be added to the pier at a later stage.