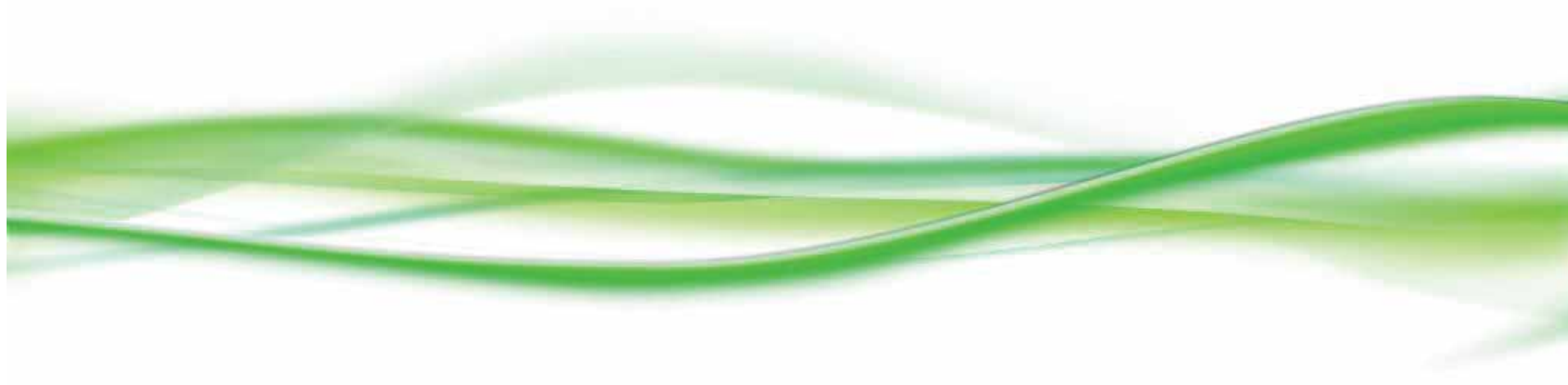


*Attractive Passenger
Environment*



Attractive Passenger Environment

The Green Train (Grönatåget) is a national Swedish research program with an ambition to develop trains as a sustainable and efficient future travel alternative. The project is a collaboration between manufacturer, science and operator and contains several sub-projects. This project is a sub project within the field of industrial design.

The project covers the whole train interior including a restaurant concept. It also includes a design concept for the front and exterior of the train.

The work has been carried out by a main design team of three industrial designers. In addition students from different disciplines have been engaged to carry out specific parts in the concept like the restaurant area.

Olle Lundberg

Industrial designer /
project manager

Martin Ranvinge

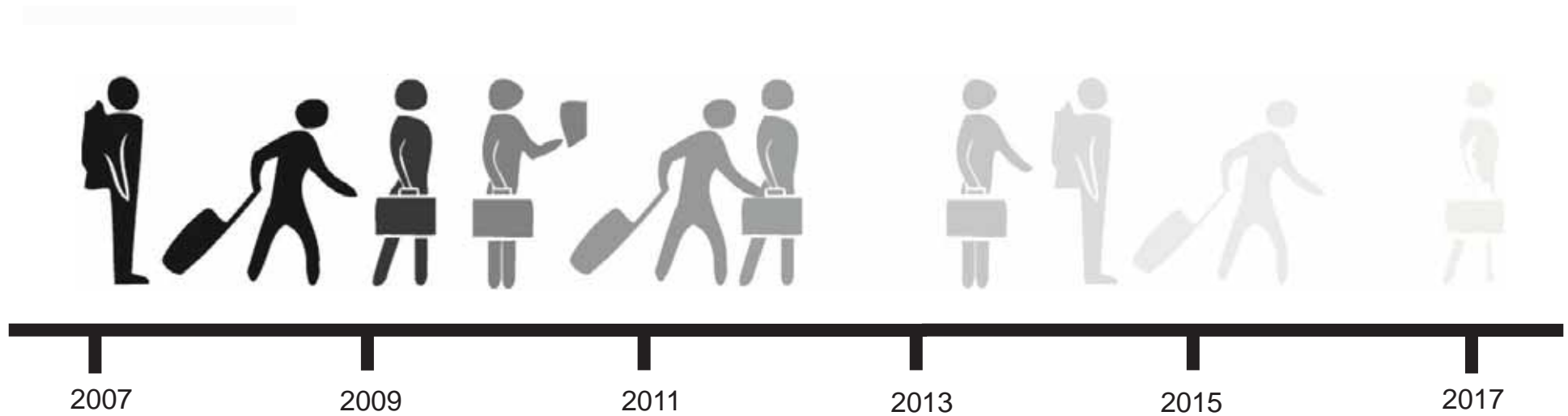
Industrial designer

Daniel Eriksson

Industrial designer

The future perspective

Gree train is in the middle of its lifecycle around 2017



grönatåget

Major task

“

*Grönatåget should work as a bank of ideas for
the Swedish rail industry in the future*

”

Speaking Partners



KTH

SJ PERSONAL

SJ EVENT

SJ AFFÄR/LEDNING

SJ BISTRO

TÅGRESEARCH EUROPA

HORIZONS 2020

BOMBARDIER

RESENÄRSFORUM

KAIROS FUTURE

FUNKTIONSHINDRADE

RESENÄRER

European trains



Asian trains



Conclusions

“

*Strategic conclusions were formed in
collaboration with our industry partners.*

*All the product concepts and innovations sprung
from these five conclusions.*

”

Conclusions

Design for everyone

An important conclusion is that functional design is beneficial for all passengers. In every concept or solution we need to think from the travelers' perspective



A memorable experience

We also believe that a future high speed train needs a design that is a little out of the ordinary, something special to remember and tell friends about. This helps building memorable product concepts like the London buses or the Shinkansen trains.



A changing market

In 2010 the Scandinavian train market opens up for competition. This is about to change the business model for trains in many ways. In the end we believe this can provide added value and services for the travellers. We believe future trains should be designed to support these services.

Sustainable transportation

Trains are by far the most sustainable transportation alternative – We believe this should be communicated better in the product design.



Quality time

One of the most unique benefits with trains is the possibility use the time on board for additional activities. The journey is just a part of the travellers plans as people tend to think of their time in a holistic way. Therefore it is important to create an interior that allow people to use their time on board in just the way that is best for their individual time-puzzle. Whether you want to **Relax, work or socialise**, the interior should help you to get thee most out of the time on board.

Basic Parameters

“

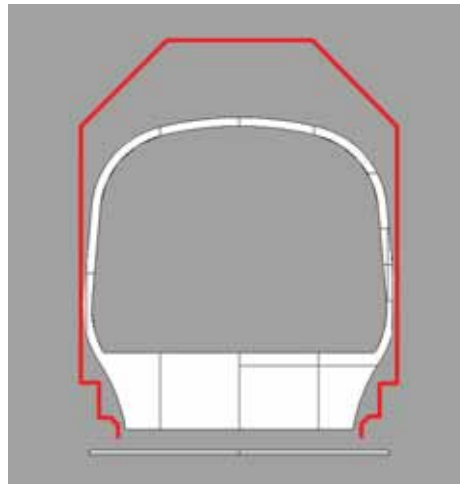
In major parts Grönatåget has been an open project with focus thinking in new ways.

Still there are some basic restrictions one needs to be aware of when taking part of the result. ”

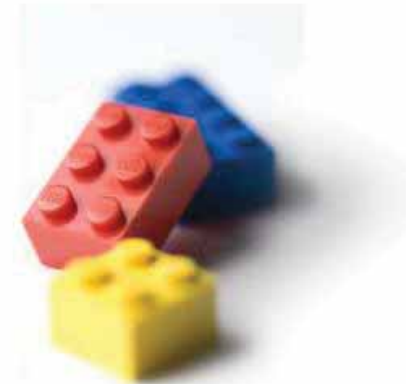
Basic Parameters

One of the worlds widest train profiles.

3400 mm inside



Modular interior system



grönatåget

The train

The concepts are sprung from problem areas we identified in the research. They are to be seen as parts of an interior module system but are not to be taken as a complete train design.

Exterior design



Exterior design

Front and exterior design

A conceptual exterior design was developed to give the project a “face” and help keep the product concepts together.



grönatåget

Exterior design

Front and exterior design

A conceptual exterior design was developed to give the project a “face” and help keep the product concepts together.



grönatåget

Exterior design

Important parameters:

Blend with existing trains

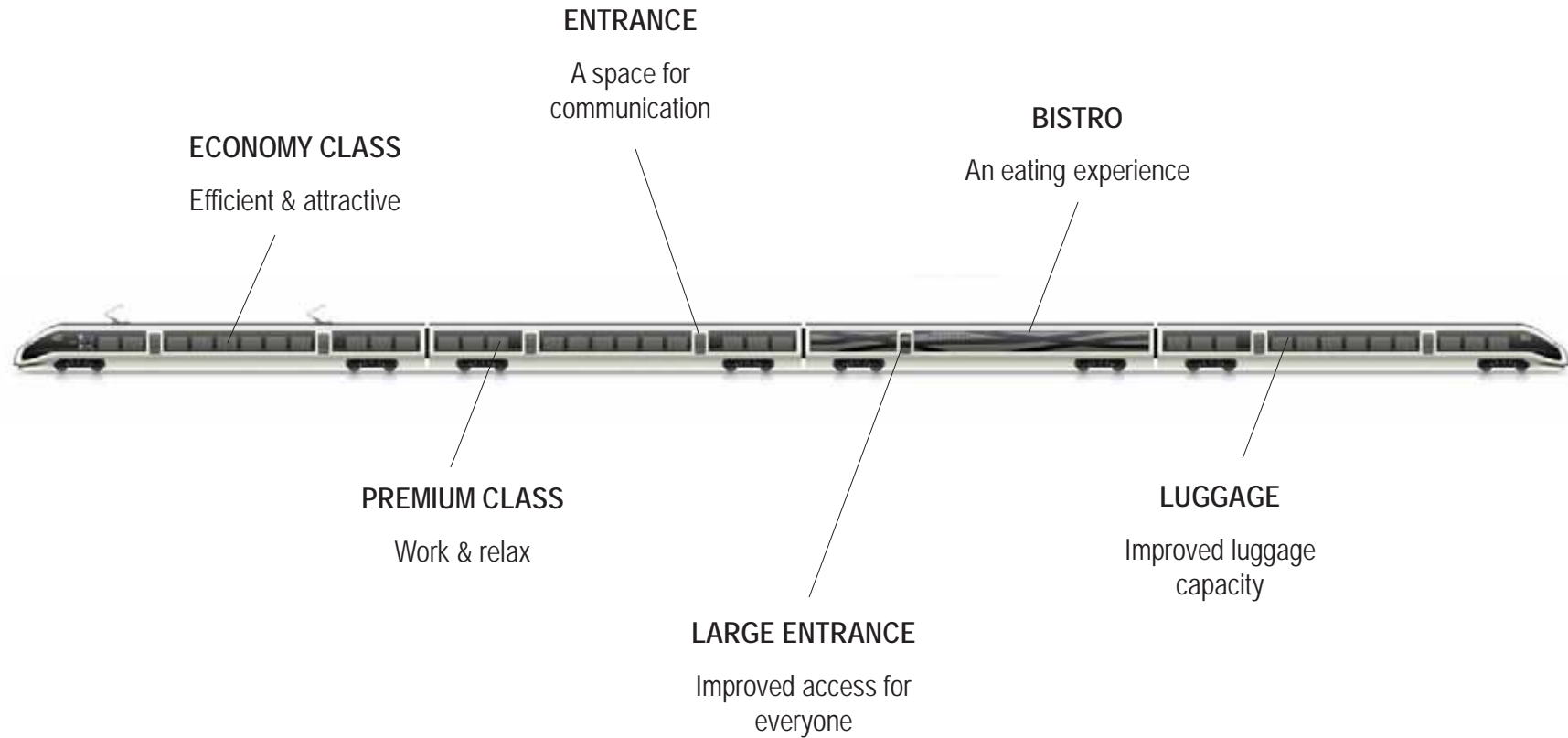
Adapt to different operators graphic profiles

Fit the scandinavian culture and environment



grönatåget

Project Focus



Economy Class

Efficient & attractive



grönatåget

Economy Class

**Train chairs
of today**



grönatåget

Economy Class

**Scandinavian
furniture
inspiration**



grönatåget

Economy Class



grönatåget

Economy class

Easy accessed personal luggage

Space for luggage under the seats

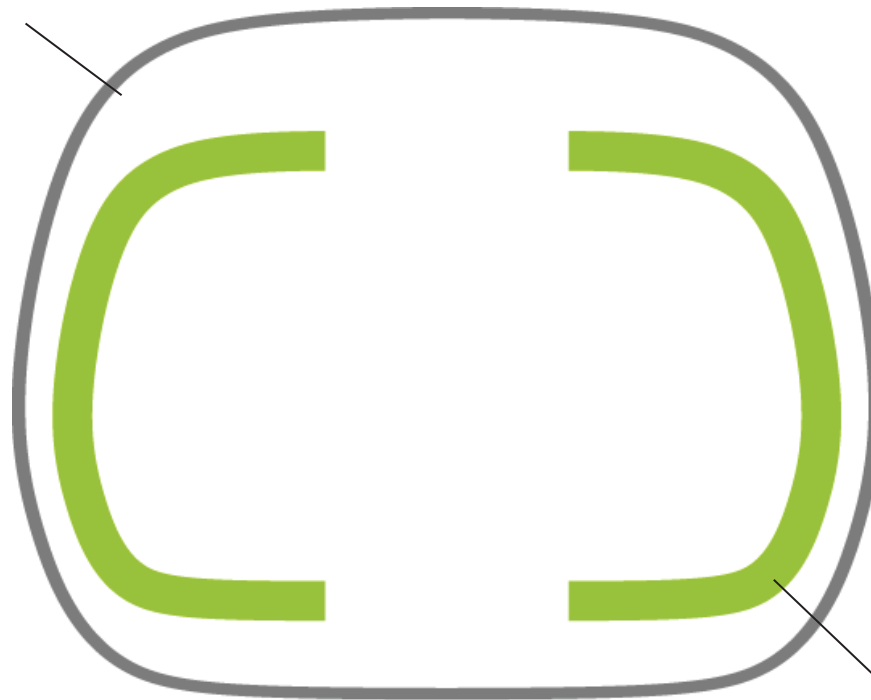
Foot step makes it easy to reach the shelves



grönatåget

Interior environment

Outer passenger environment



Inner passenger environment

grönatåget

Interior environment

Outer passenger environment

Relaxed

Nature

Speed

Open



grönatåget

Interior environment

Inner passenger environment

Relaxed

Welcoming

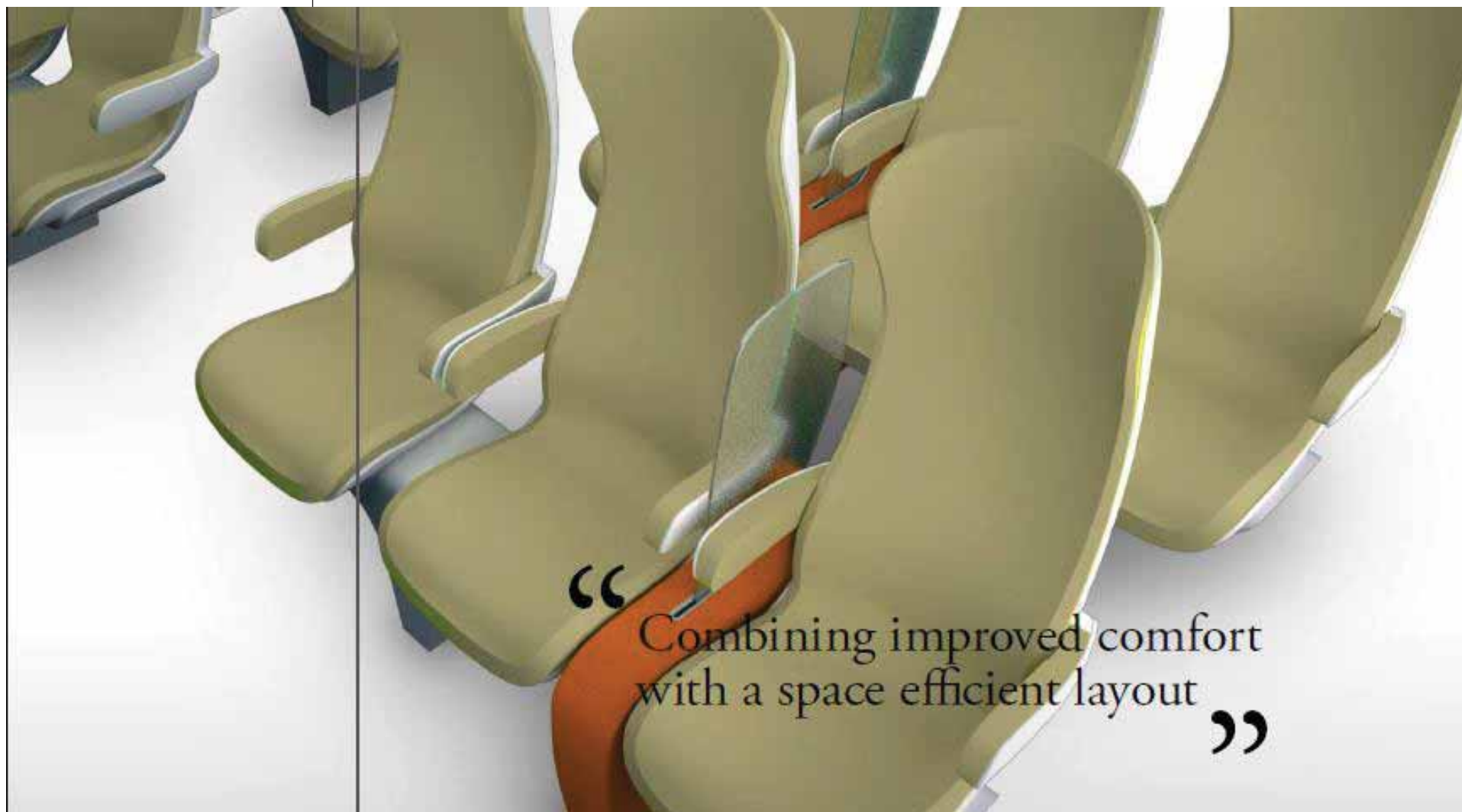
Scandinavian

Silent

Caring



grönatåget



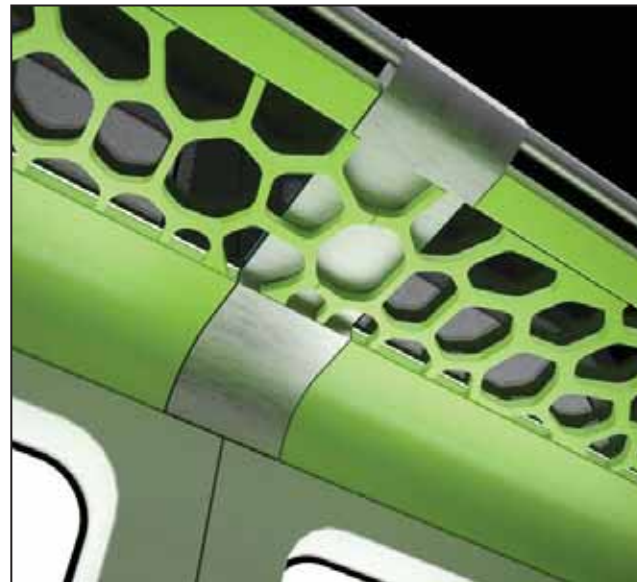
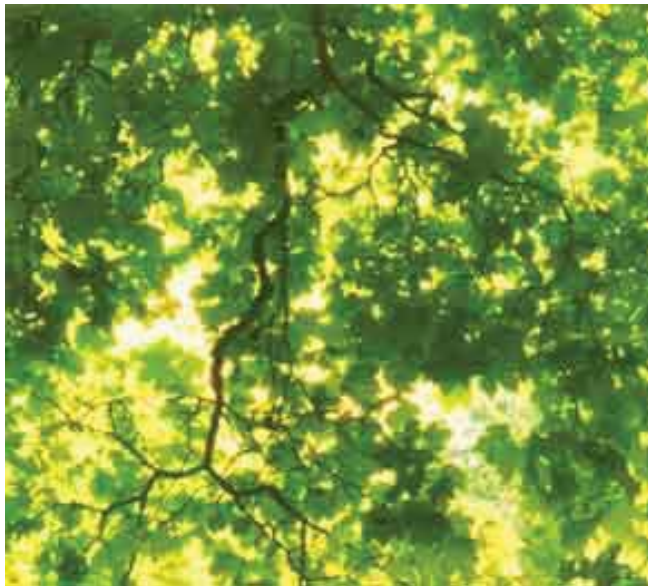
“ Combining improved comfort
with a space efficient layout ”

grönatåget

Economy Class

Luggage compartment design

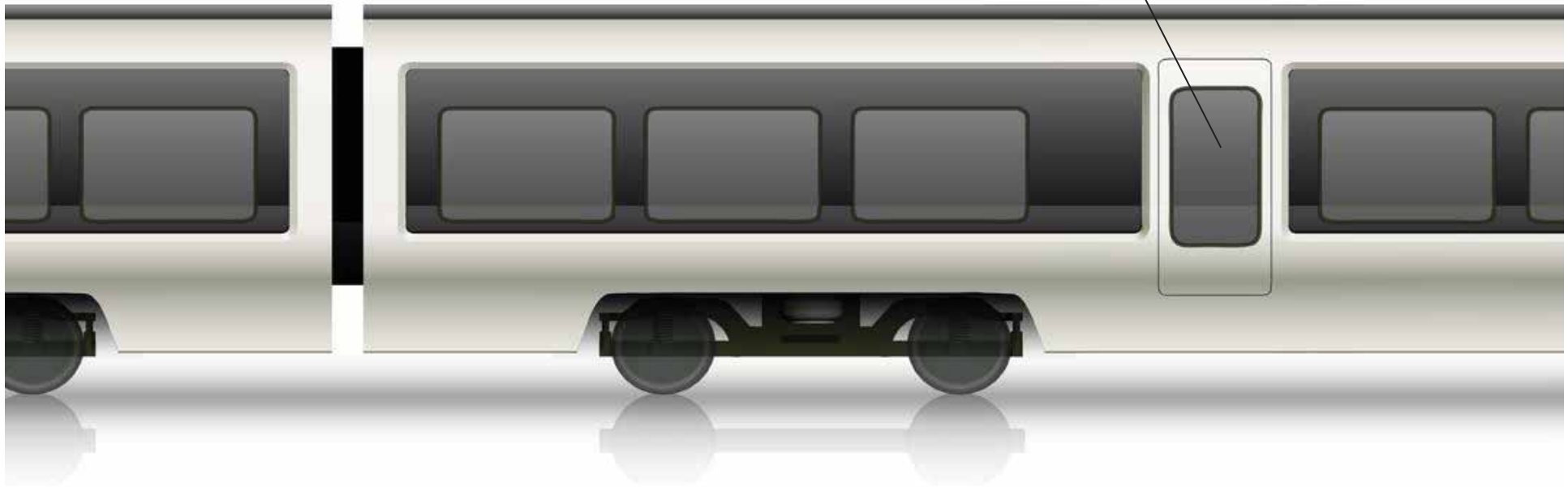
A warmer and lighter expression in economy class



grönatåget

Entrance

A place for communication



grönatåget

Entrance

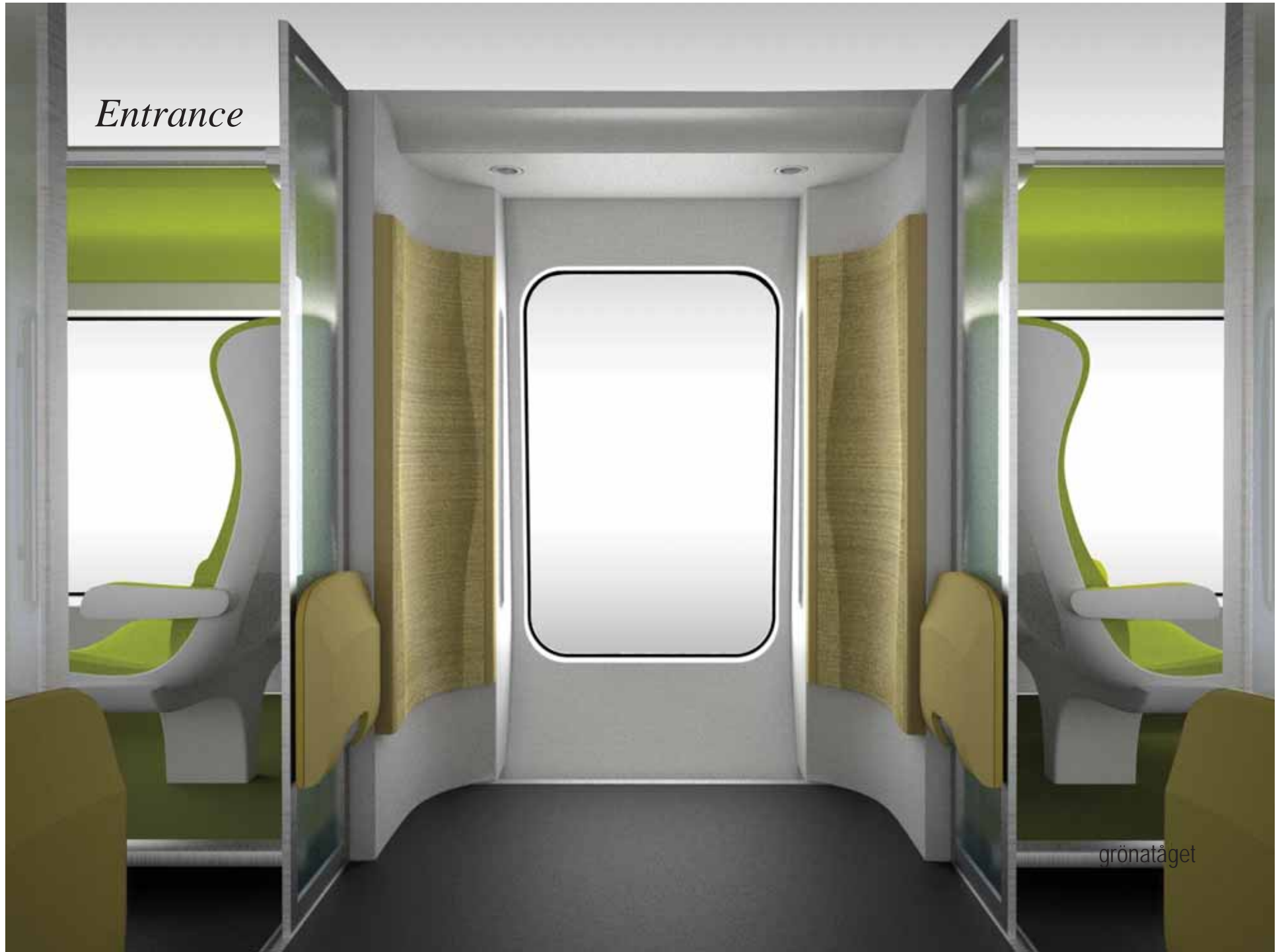
A welcoming entrance or unused space?



Pictures from existing trains entrances.

grönatåget

Entrance



grönatåget

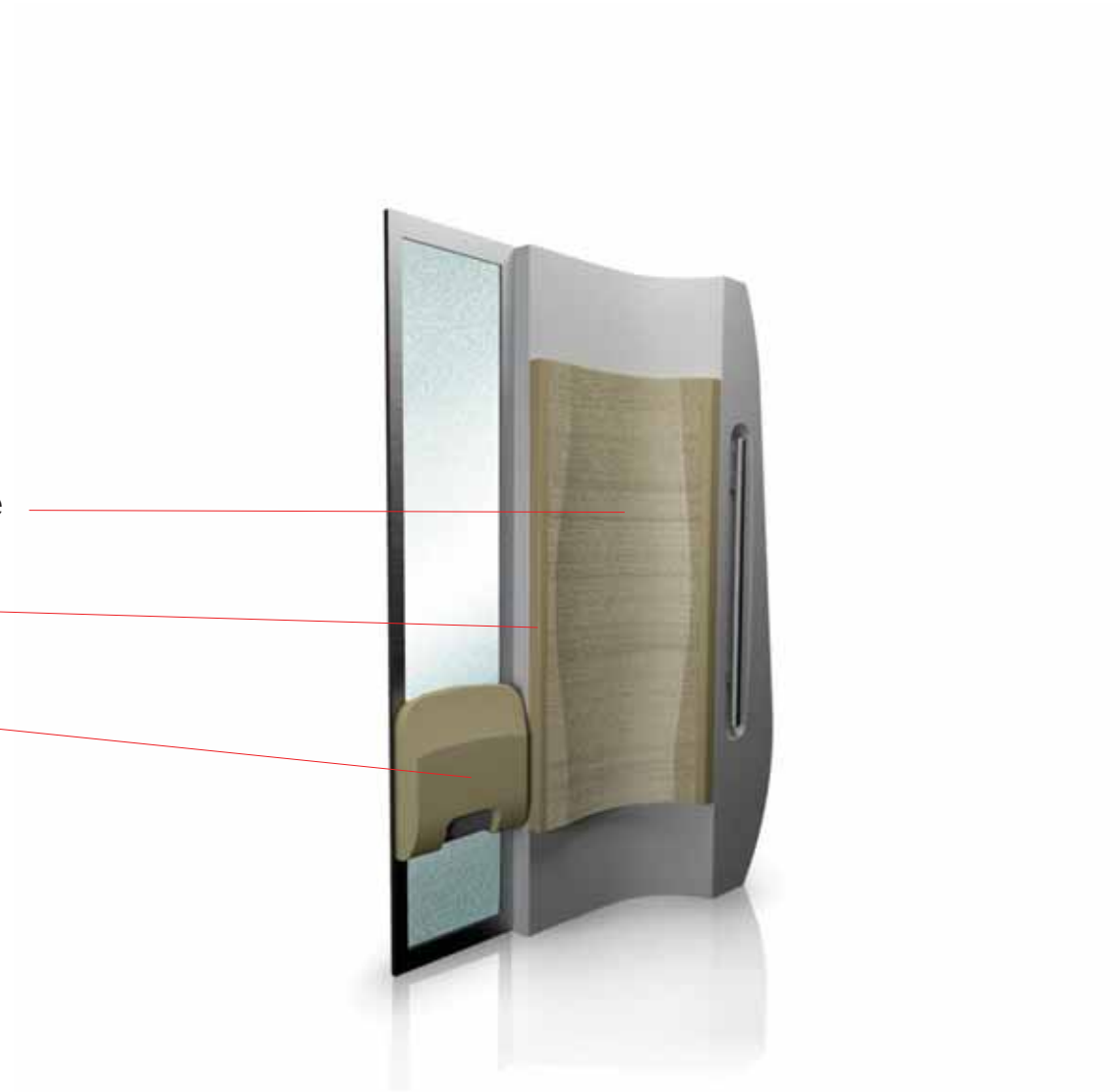
Entrance

Corner unit design

Sound suppressing
textile leaning surface

Metal edges

Foldable seat



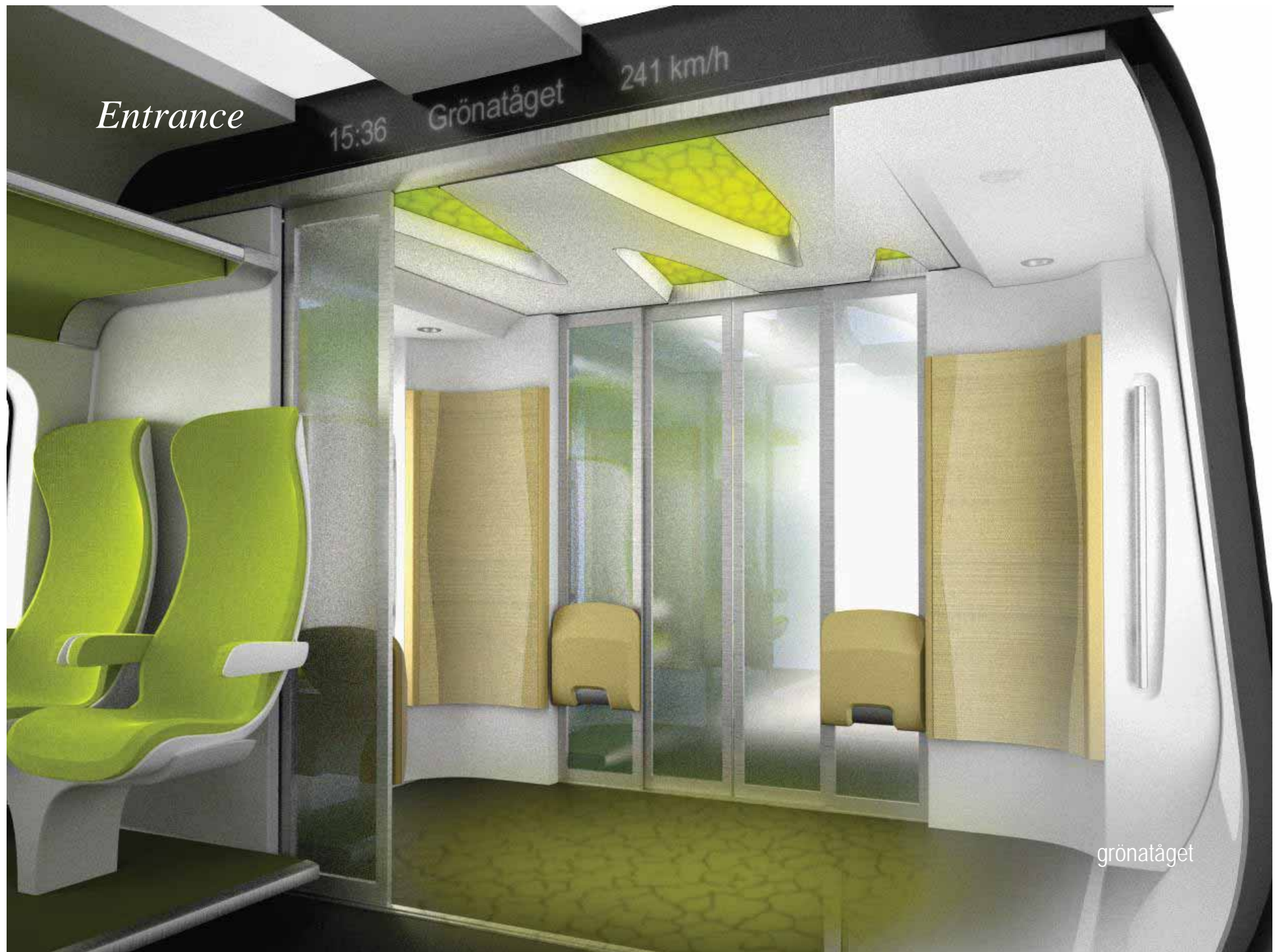
grönatåget

Entrance

15:36

Grönatåget

241 km/h



grönatåget

Entrance

15:36

Grönatåget

241 km/h



grönatåget

Entrance

15:36

Grönatåget

241 km/h



grönatåget

Entrance

15:36

Grönatåget

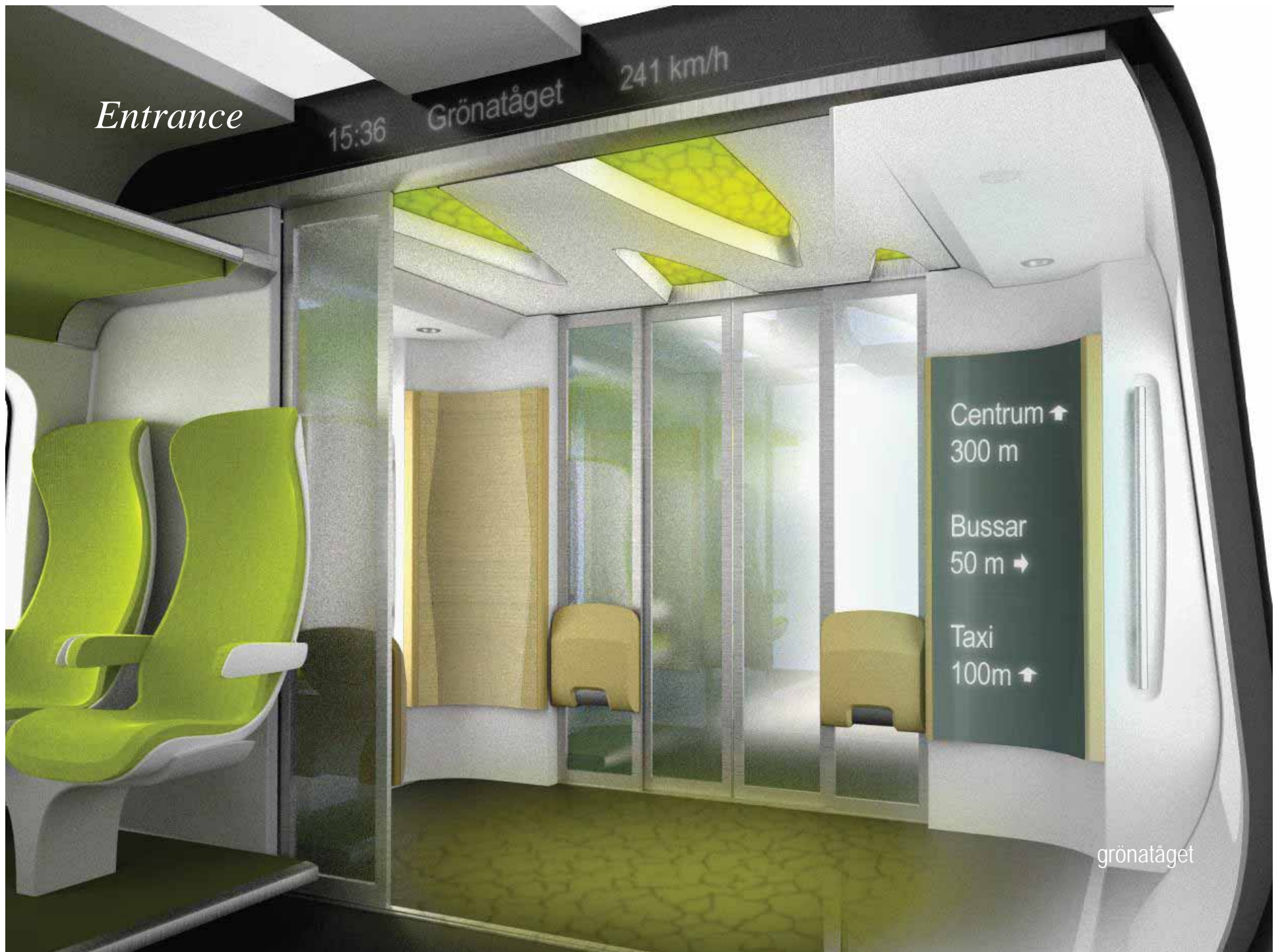
241 km/h

Centrum ↑
300 m

Bussar →
50 m

Taxi ↑
100m

grönatåget



Entrance

Different themes in each entrance – A personal impression and a better orientation in the train



grönatåget

Premium Class

“

The train journey is just a part of the day.

The ideas shown in this segment is based on user studies and improves the possibilities to relax and work with optimal comfort.

”

Premium Class

Work & relax



grönatåget

Premium Class



Examples of how people try to make it comfortable when the seats doesn't give support enough

Premium Class

"I use the time on board to prepare my meetings"



Pictures illustrating the inconvenience of traditionally tables placed on the back of the seats
(Photo: Kjell Sundqvist)

Premium Class

Individual relaxing

Head cover in back of seat

Reduces sound and visual elements

Works both when resting and when sleeping



Premium Class

Individual relaxing

Different seat ideas on how to give support for your head sideways and reduce audial and visual noise



grönatåget

Premium Class

Mockup

Some of the design work was carried out in the full scale interior mockup that was built during the project.



Premium Class

Mockup



Sketch models of different head rests



Test model of table placed on your own seat

grönatåget

Premium Class

Mockup



Test model of dividing arm rest



Test model of foldable and adjustable head rest



Premium Class

User studies

User studies were made in full scale train environment to get feedback on new design ideas. We also did qualitative interviews to understand how people experience different situations when travelling on train.



Premium Class

The chair is designed to improve the experience of comfort for passengers and to be space efficient at the same time



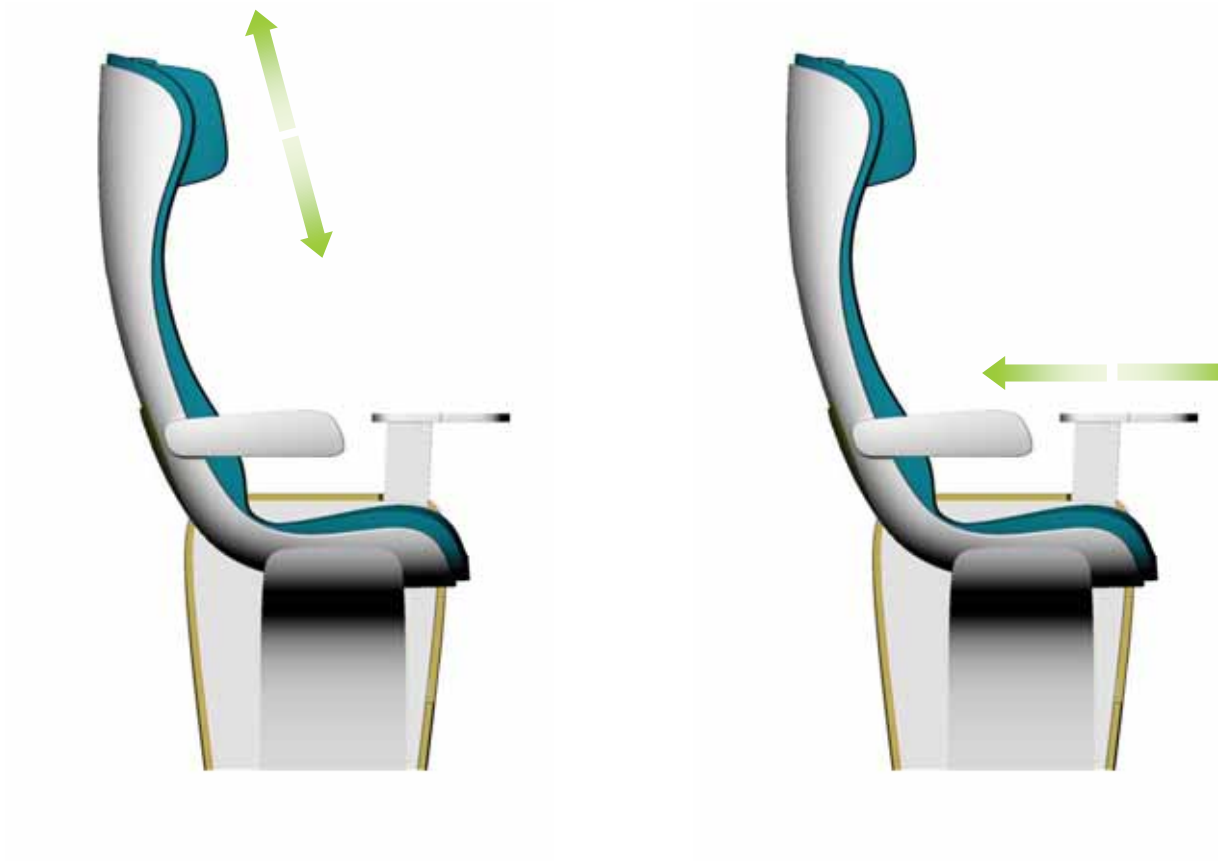
grönatåget

Premium Class

Adjustable comfort

Neck rest adjustable in height - comfort for everyone

Adjustable table – ergonomic benefits



grönatåget

Premium Class

Privacy screen between the seats makes you comfortable working with "secret" information e.g. on your lap top screen.

Foldable and adjustable table gives you a good ergonomic working position.

A flexible solution as the table position isn't depending on the row distance (pitch)



Premium Class

Work and relax

Create your own sphere with the foldable head rest

It gives comfortable sleeping possibilities and minimises visual and audible noise.



grönatåget

Premium class



grönåget

Premium Class

Luggage compartment design

A relaxed and more discreet expression compared to economy class



Premium Class

Inner ceiling

The design creates a feeling of an open sky roof with day light.



Large Entrance

“

The entrance is the first impression of the train interior. The time it takes to change passengers at the station is critical. Those two parameters were important when creating this large entrance concept - An entrance for everyone.

The population is getting older and there are many people with different needs of bringing different accessories. Many of the solutions today for bringing a wheel chair on board makes you feel uncomfortable. They demand attention from the train staff and works only for one wheel chair at the time.

From the travellers point of view we created an “main entrance” where everyone can get on board easily. From the operators point of view this concept is efficient and saves time at every station.

”

Large entrance

Improved access for everyone



grönatåget

Large Entrance

Welcome onboard?



grönatåget

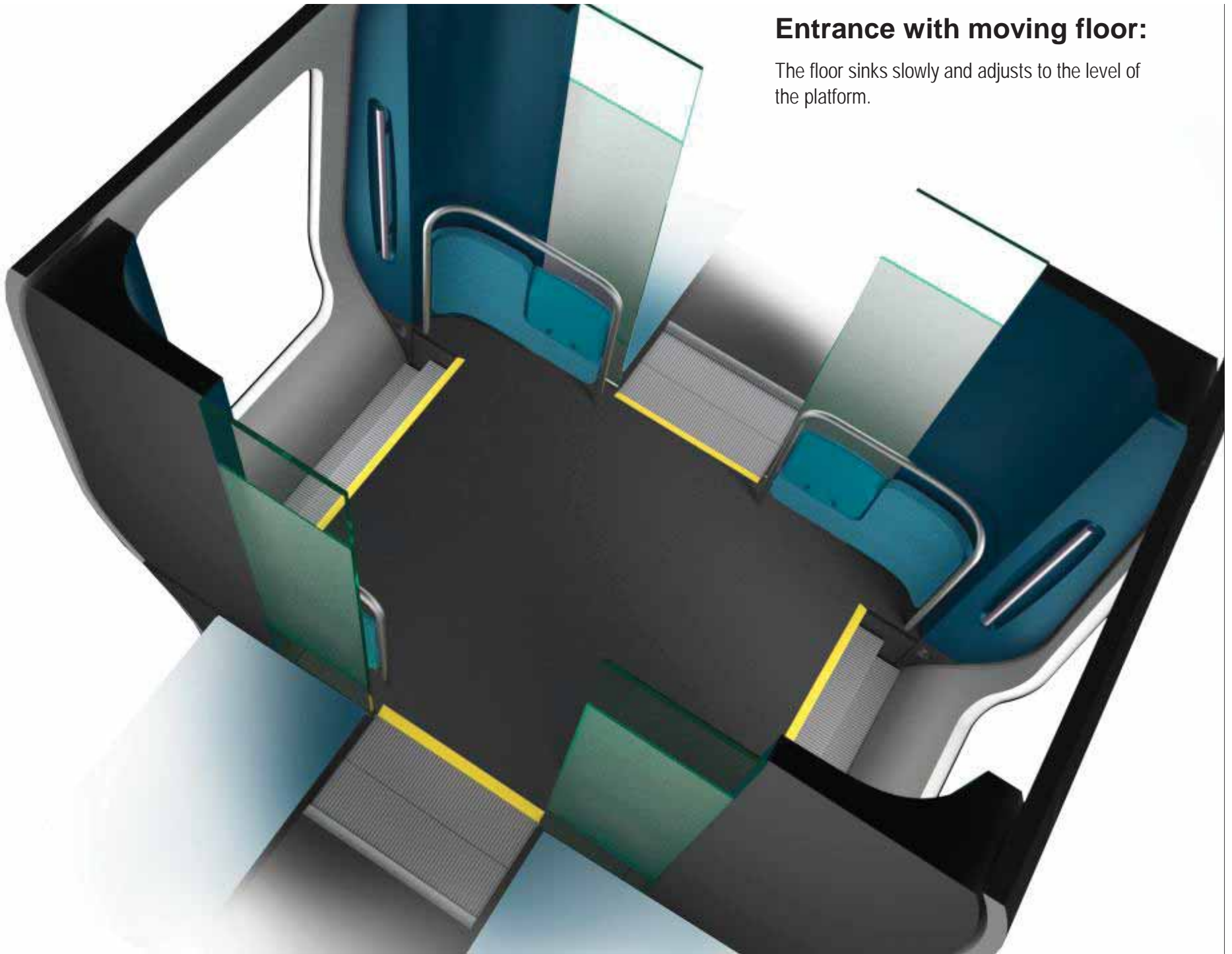
Large Entrance



Couldn't it be more like a big welcoming main entrance to a great mansion?

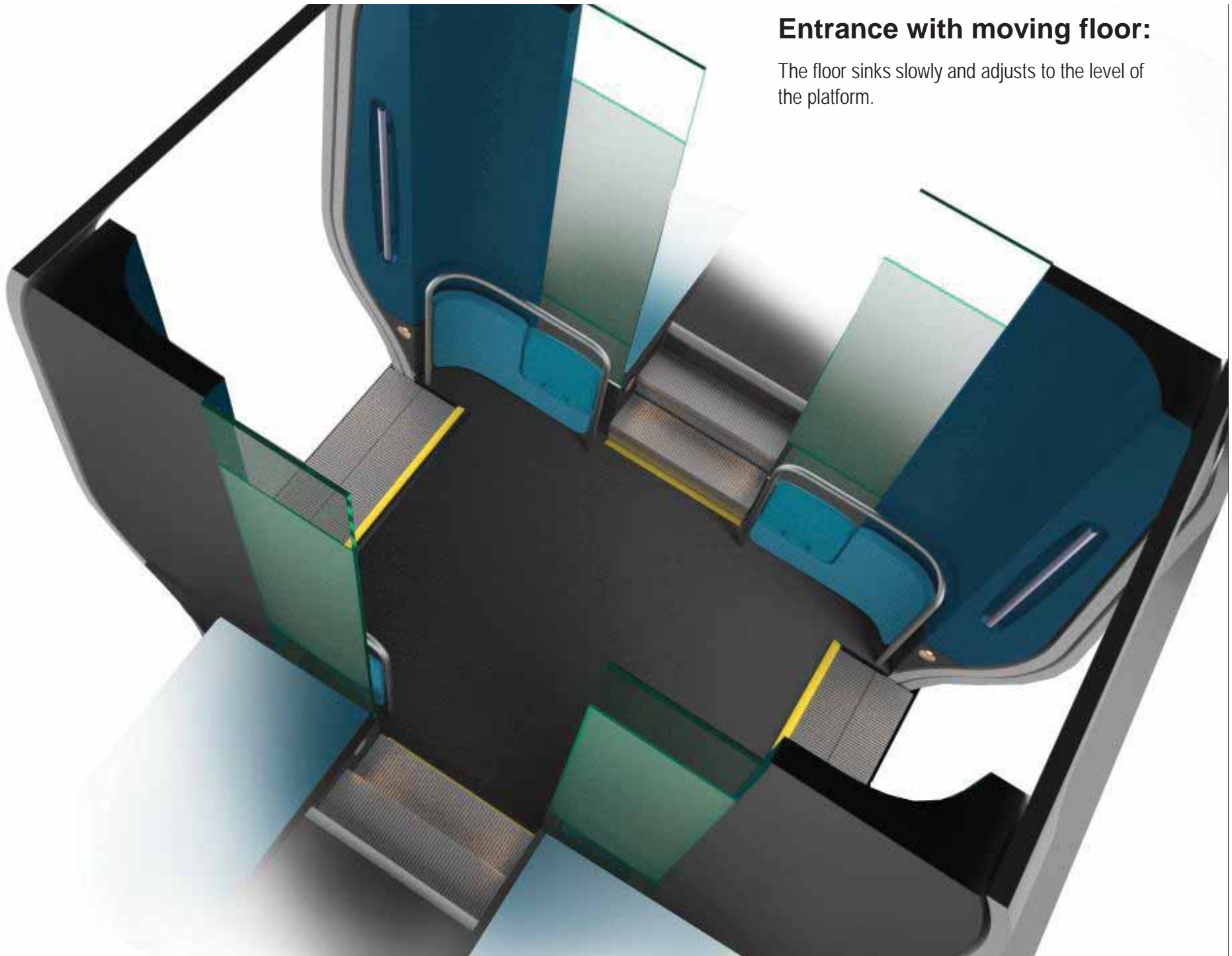
Entrance with moving floor:

The floor sinks slowly and adjusts to the level of the platform.



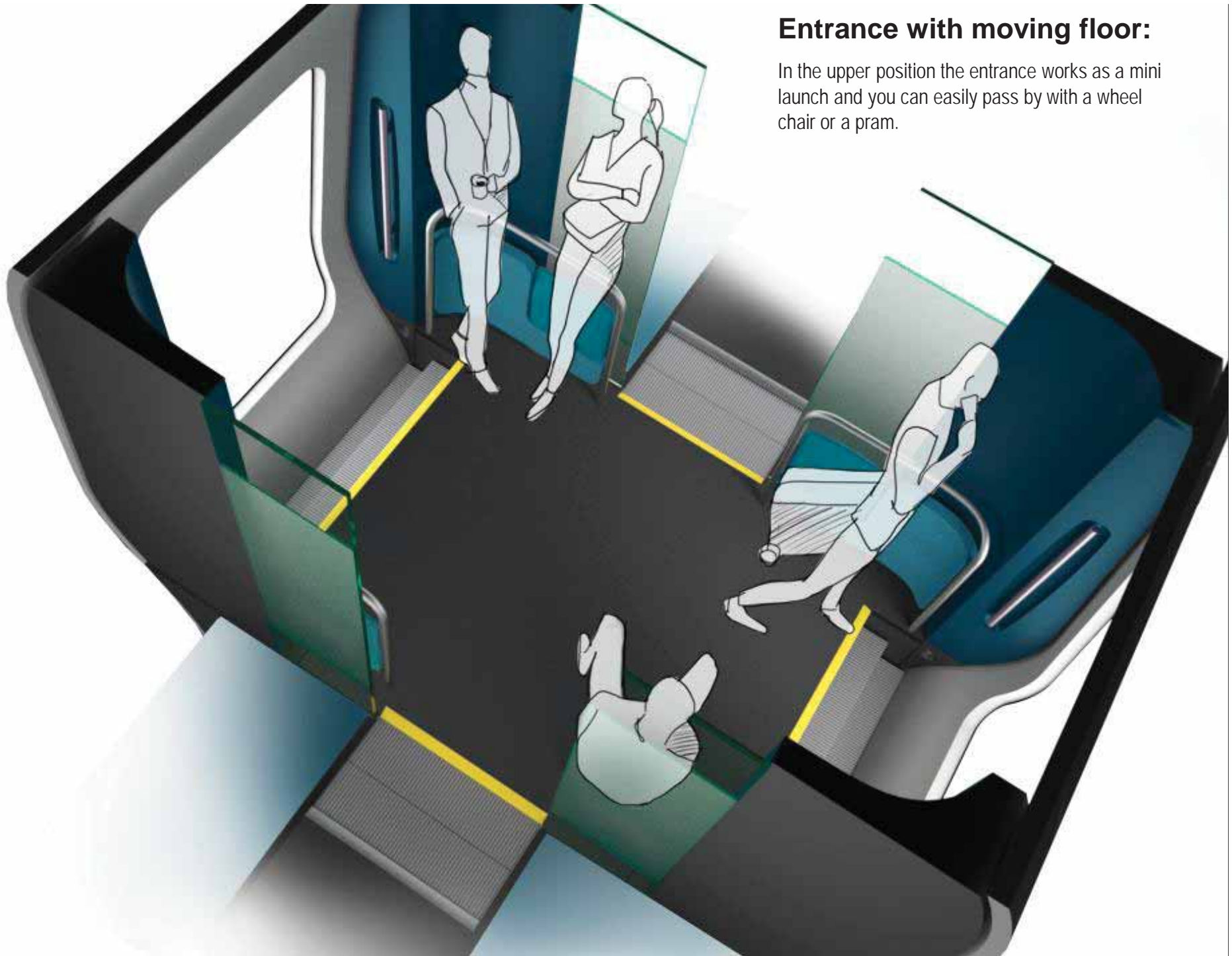
Entrance with moving floor:

The floor sinks slowly and adjusts to the level of the platform.



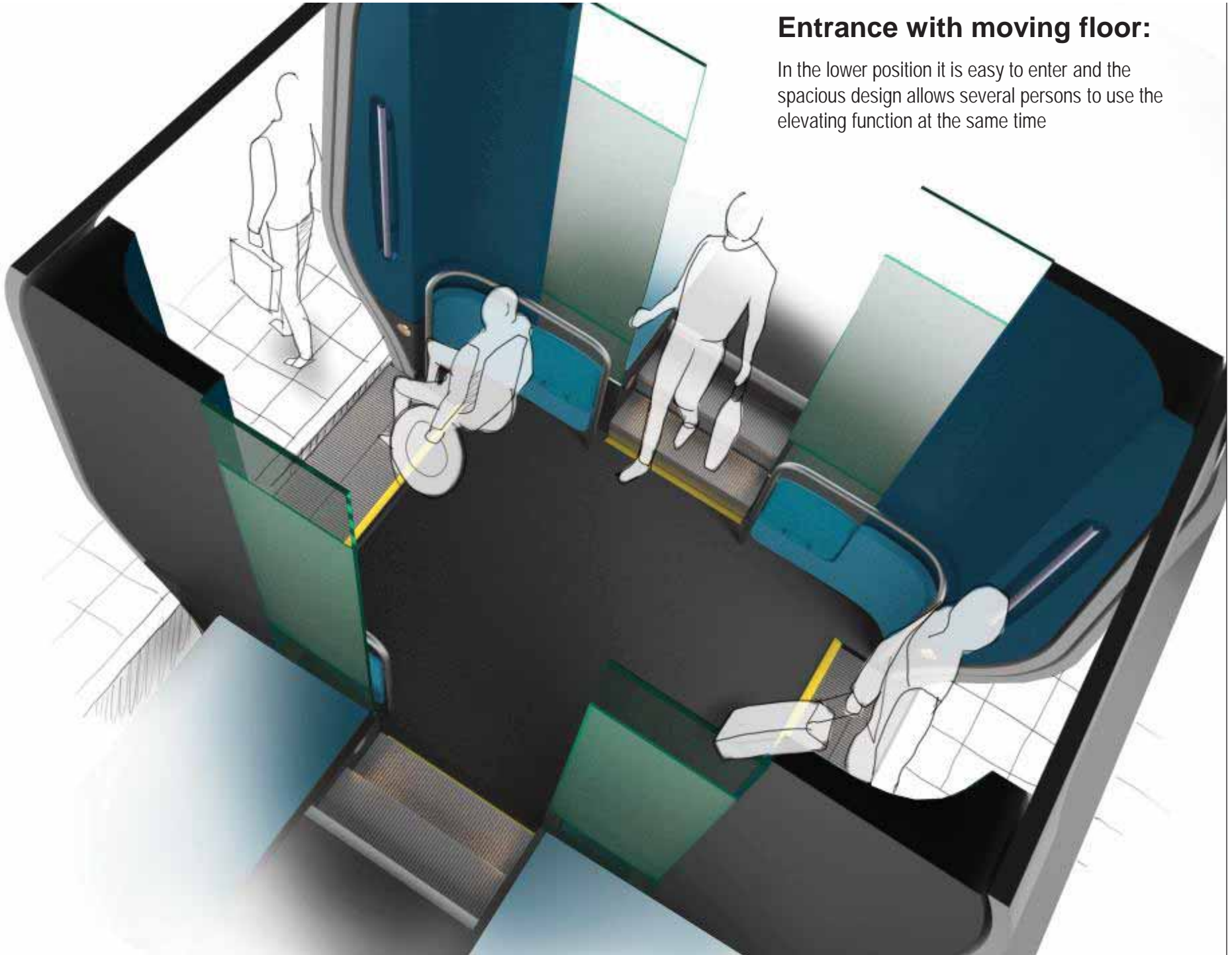
Entrance with moving floor:

In the upper position the entrance works as a mini launch and you can easily pass by with a wheel chair or a pram.



Entrance with moving floor:

In the lower position it is easy to enter and the spacious design allows several persons to use the elevating function at the same time



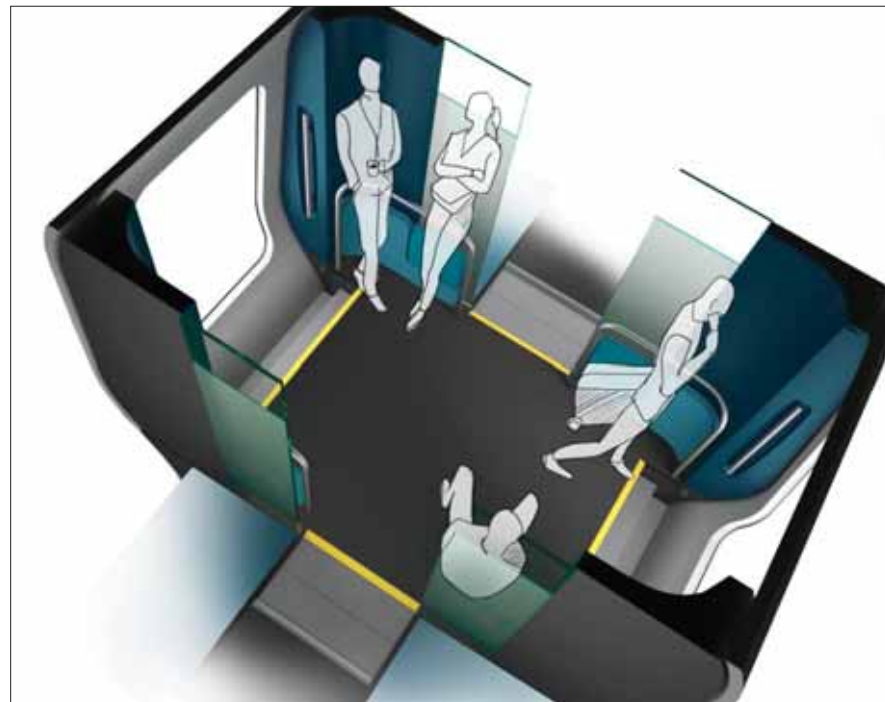
Large Entrance

Benefits:

High capacity - short stop at the stations

Everyone can use the entrance, without assistance

Everyone can pass through the train - and reach the bistro



Luggage

“

A wider train with more seats means more luggage per meter train. The luggage capacity of the trains today is already overloaded especially at weekends at holidays.

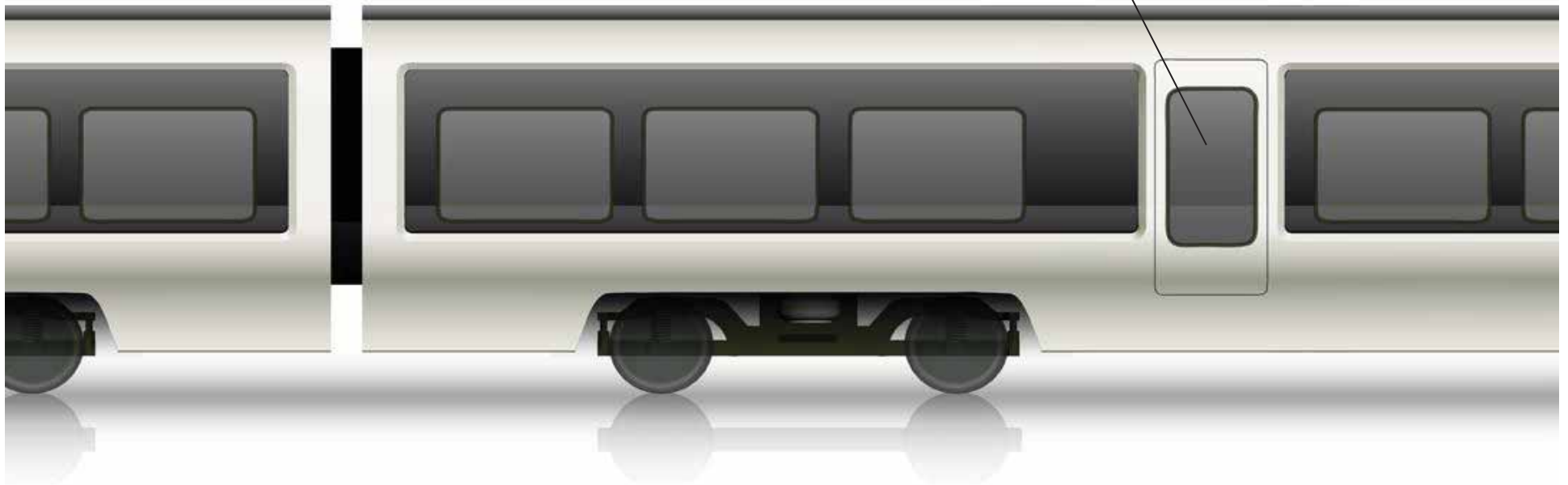
There is also a need to improve the handling of luggage in a convenient way.

This project focused on improvements for small to medium sized luggage. The concepts shown could together increase the capacity for small and medium luggage with up to 25%.

”

Luggage

Improved luggage capacity



grönatåget

Luggage

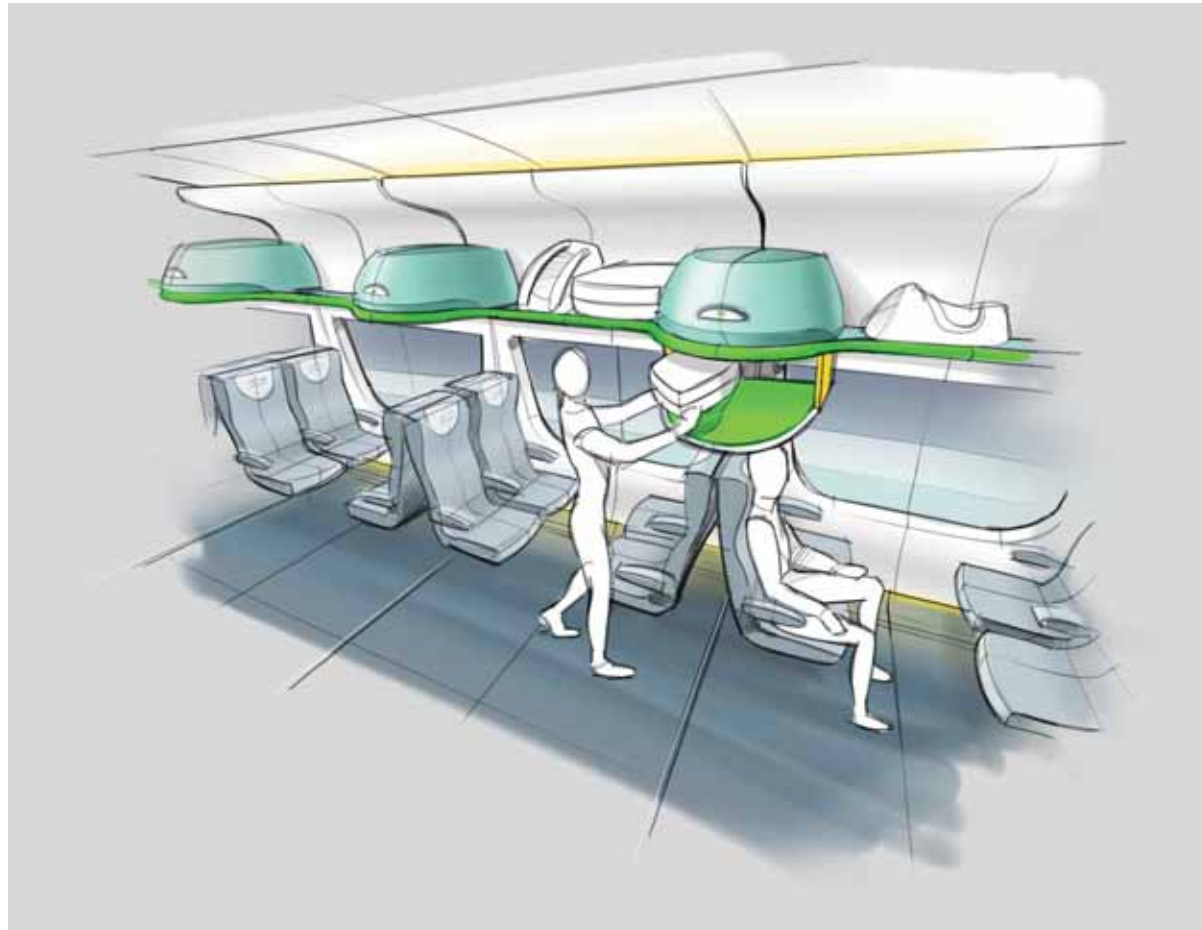
Increased need for luggage space

Luggage on trains is a well-known problem

A wider train with more seats means more luggage/meter.



Luggage

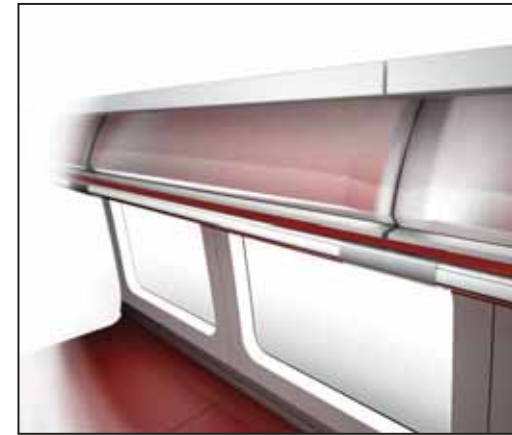


Some of the many idea sketches

grönatåget

Luggage Capacity

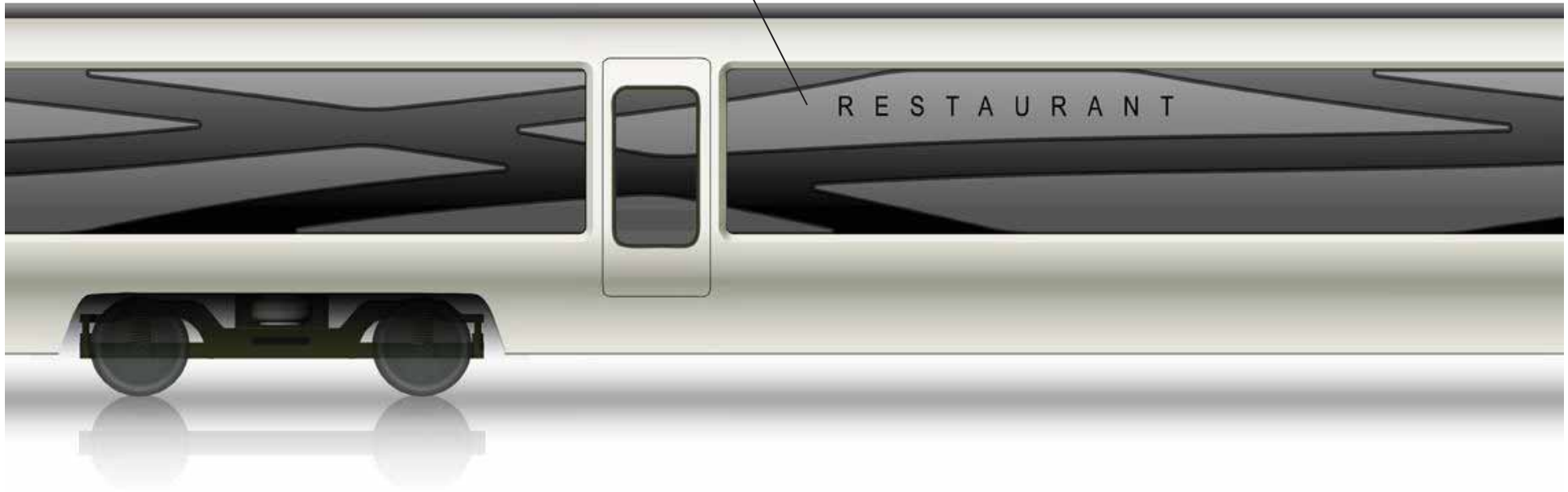
**15-25% more
luggage capacity**



grönatåget

Bistro

An eating experience



grönatåget

Bistro

To gather around food

Relaxing eating environment

The journey as a pause

Access fore everyone



Bistro

Research trip to China

The night train between Beijing and Shanghai



Bistro

Food origin declaration



mat fakta

ursprung

- kött - Hässleholm
- rotsaker - Skövde
- grönsaker - Linköping



*Dagens kött:
Älg gryta och rostade rotsaker*

Example of one of the screens exposing the dish, tells you the amount of nutrition and showing the origin.

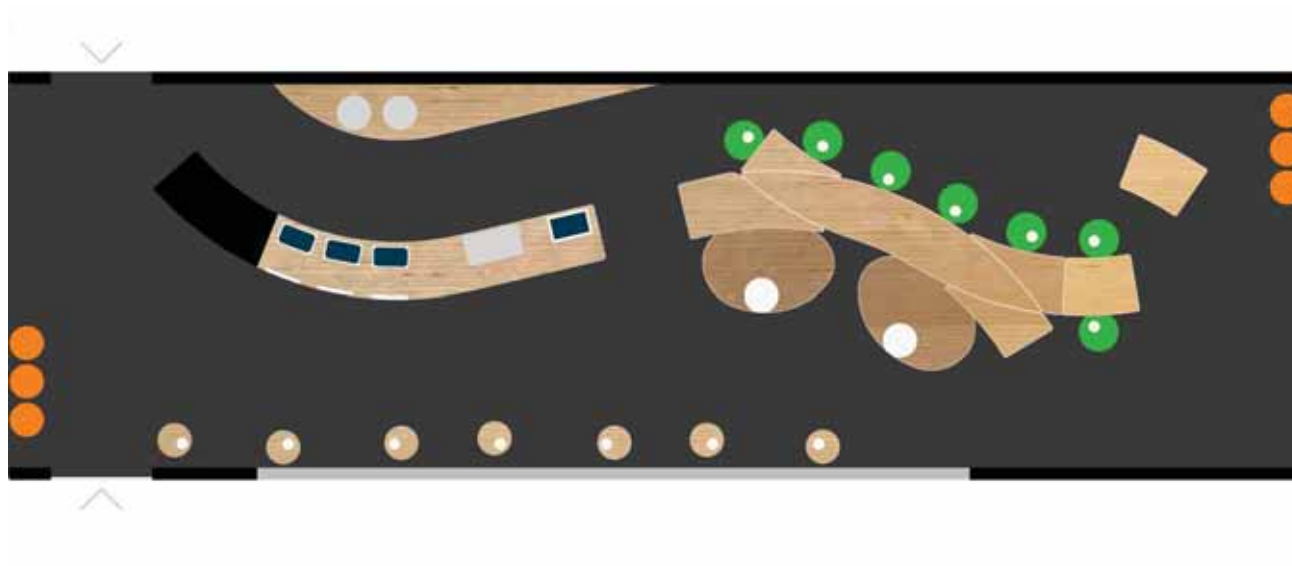
Bistro

Plan – small unit

Around 25 guests

20% easy access seats

Centred seating



grönatåget

Bistro

Full coach, outside

The open and dynamic design gives character to the train and glow welcoming in the dark



Bistro



CONTACT

Transformator Design Group AB
transformatordesign.se

Daniel Eriksson
Daniel.eriksson@transformatordesign.se
070 399 38 34