

## Inclusive Design Guidance – Ticket Sales



## Document Identity

### Ticket Sales Guidance

1285-Document 11

## STE Authorisation

Name	Department or Role	Signature
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## Access & Inclusion Endorsement

Margaret Hickish	Access and Inclusion Manager
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## Disclaimer

It is the responsibility of the Designer and / or Contractor to ensure that projects are compliant with all legislation. Compliance with this guidance does not absolve them of these responsibilities. This document is for guidance purposes only. There the guidance cannot be followed this shall be evidenced and an alternative shall be proposed to the project sponsor.

Revision Information

Version	Date	Description of changes
1	October 2016	Draft issue
2	July 2017	First issue

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## 1 Purpose

Most of today's railway was designed during the Victorian era. Traditionally infrastructure organisations specialise in engineering and frequently have not given sufficient consideration to the impact of the designs on people. Inevitably this has resulted in inconvenience for the users and reputational damage for the service providers. We now have a much better understanding of how our built environment should provide wider access and inclusion for everyone.

Network Rail has published the Inclusive Design Strategy (2015-19) to provide a vision for dealing with these issues. The Inclusive Design Guidance documents form the technical component to accompany and illustrate the Inclusive Design Strategy, and this guidance deals with the provision of ticket sales by staff in stations.

## 2 Background

Ticket offices are often a major part of a station regeneration programme and perform a key role at many railway stations. Ticket sales counters are the first point of contact with fare-paying customers and their design involves a very complex & difficult integration of ergonomic considerations to achieve a satisfactory outcome for both the customer and the station ticket office staff. Guidance to date on this subject has not always been very clear as is evident from the various interpretations, by different station operators, that in most cases do not demonstrate inclusivity.

The picture here is of a typical accessible ticket office (on the right) that is perfectly compliant with the legislation but unfortunately is segregated and closed most of the time. It could be described as a sacrificial sales point to meet the legislation.

**Photo 1**



A survey of ticket counters in London during 2012 revealed the prevalence of additional unsatisfactory examples from the point of view of inclusivity and even compliance:

1. Mechanically Adjustable Counters – These are impractical for the staff and expensive to install and maintain. Not popular with wheelchair users because they attract special attention while slowing down everybody else. (Because of their high cost, there is typically no more than one of these in any station.)

2. Low Counters – In some locations it was decided to provide uniformly low counters which are ergonomically incorrect for the majority of the customers who are standing and is also not liked by the sales staff who are obliged to work in the sitting position and to look up at the customer. (Very often, other ill-considered aspects of the design such as the wrong location of the PIN machine will make such installations also unpopular even among wheelchair users).
3. High Counters – The London Underground ticket counters (London Underground Standard S1371) are an example where the ergonomic requirements of a minority are ignored in the design but managed on an individual basis by the service provider (London Underground does not have to abide by the European PRM TSI nor do the clauses in the DfT COP for Railway Stations apply to it.) However as the owner of the regulated railway, Network Rail cannot follow the London Underground/TfL approach as it is not compliant with the PRM TSI and train operators typically refuse to accept counters designed in this manner.

The DfT COP does not help the situation by referring to BS83000 which does not give clear advice on resolving the very particular and conflicting ergonomic requirements between a standing customer, a customer sitting in a wheelchair, and a ticket vendor (who could be sitting or standing).

### 3 Regulatory / Legislation

As part of the European Railway network TSI (Technical specifications for interoperability) legislation (2012) for lines on the European Network, station buildings and facilities have to comply with the 'Persons with Reduced Mobility' (PRM) requirements which are captured together with other UK legislation in the DfT Code of Practice 2015 that is titled Design Standards for Accessible Railway Stations

The Equality Act 2010 which brought together over 116 separate pieces of legislation (including the Disability Discrimination Act DDA) into one single Act protects the public from discrimination and requires facility providers and operators to provide an inclusive accessible environment.

Network Rail has a policy to undertake a Diversity Impact Assessment (DIA) to demonstrate due consideration has been paid to the needs of potential users of a facility under the Equality Act. Typically for station enhancement works a DIA would evaluate the approaches & facilities at a station and when feasible refer to an access audit which would have identified areas for accessibility improvements.

The requirements of the DfT COP are summarised below:

- Where manual ticket sales counters, information desks and customer assistance points are provided along the obstacle free route, a minimum of one desk shall be accessible to a wheelchair user and to people of small stature and a minimum of one desk shall be fitted with an induction loop system for hearing assistance.
- If there is a glass barrier between the passenger and sales person at the ticket counter, this shall either be removable or, if not removable, an intercom system shall be fitted. Any such glass barrier shall consist of clear glass.
- If electronic devices are fitted that display pricing information to the sales person, such devices shall also be fitted that display the price to the person purchasing the ticket.
- Reference is made to BS 8300 Figure 29 as guidance (but this is very misleading).

As described above, the current legislation is not deemed by Network Rail to deal in a coherent and sufficient manner with the provision of inclusive ticket sales counter. It has therefore

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established the standard design described in Appendix C that is

compliant and acceptable in principle.

## 4 References

A non-exhaustive list of legislation, standards and guidance notes are included in appendix B.

## 5 Design Considerations

The dual height counter design that has been adopted by Network Rail for all its new ticket counters with the following features:

- A patented flexible transaction tray which can be used by seated or shorter stature customers if they wish.
- A Chip & PIN machine on a suitably positioned extendable arm, so it can be used by both standing and seated customers equally easily.
- A glazed screen separation is required for most Network Rail stations due to issues concerning station security as well as staff comfort. It is true that in large stations with an expansive number of sales points there could be good arguments for excluding the glass separation, and this can be accommodated by a design using the same ergonomic principles in such locations.
- Acoustic speaker system integrated with the glazing.
- An induction loop system.
- An optional security shutter is incorporated externally, so as to provide security to the Chip & PIN machine, and the rest of the ticket office. This is necessary for stations which are open and unstaffed in hours when the ticket office may be closed.

The following ergonomic considerations concerning working conditions have been also addressed:

- It is assumed that ticket sales staff will usually work from a standing position. This assumption arose from observations of ticket office staff, and discussions with them. Although there are a range of views on sitting vs. standing workstations, recent work has indicated that standing work may be the healthiest option and is generally most favoured by the ticket sales staff.
- A high level, fully adjustable, chair is provided to allow a change of posture and to provide for periods of rest. A mobile foot rest is also recommended.
- The ticket sales staff are Display Screen Equipment (DSE) users. Ticket sales staff are defined as DSE users under the Display Screen Equipment Regulations (1992). The Health and Safety Executive Guidance document on these Regulations (2003) sets out minimum workstations requirements, and refers to BS EN ISO 9241:5. This workstation has been designed with these in mind, to provide sufficient space for all equipment the user must access whilst locating items at suitable height and reach distances, and providing adequate leg and knee space under the workstation for those who do need, or wish, to work seated (either on a wheelchair or chair).
- Reach distances have been optimized for both customer and sales staff. When two people face one another across a counter there will inevitably be some compromise on the

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worktop depth to ensure that they can both reach anything passed between them. Compromise has been reached in this design after careful consideration and consultation with a range of users including wheelchair users.

Importantly, it was noted during this process that BS 8300 does not assist designers to provide a comfortable reach distance for both parties in these situations (Figure 29 of that publication would suggest an excessive reach depth).

- The equipment is laid out on the workstation so that the most frequently used item, the cash drawer, is directly in front of the user. When shut, this also forms a convenient

writing surface (since users reported that there is a regular need to complete handwritten forms, for example for rail cards or refunds). Sales staff can move much of the other equipment around to suit, and this design can accommodate alterations to suit either left or right handed users.

- The ideal width of the module is 1.8m although it could be reduced to 1.5m in very constrained situations.

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## 6 Requirements

All investment and enhancement projects that involve a new Network Rail owned ticket counter shall tender their design and construction work (from GRIP3 onwards) on the basis of the Design in Appendix C.

Alternative designs shall be considered on merit and evidence that all the criteria described in this guidance have been met.

## Appendix A- Definitions

### AfA

The DfT 'Access for All' programme is delivered by Network Rail and provides accessibility improvements at selected stations.

### CDM

Construction Design and Management refers to regulations issued in 2007 by the Health and Safety Executive that place legal duties on clients, designers and contractors involved in construction activity.

### CSM and CSM REA

Common Safety Method for Risk Evaluation and Assessment is an ORR imposed European regulation that places duties on those in charge of projects who wish to implement a change to a technical, operational or organisational aspect of the railway system.

### DIA

Diversity Impact Assessment is the process by which Network Rail assesses and consults, under the Equality Act (2010), on the effects that a project will have on different groups in the community.

### Deviation or Derogation

For Network Rail and Railway Group Standards, a deviation is defined as "a departure or alternative approach" from the originally specified requirement.

The Network Rail process is defined in [NR/L2/EBM/STP001/04](#) 'How to manage deviations to Network Rail and Railway Group Standards'

### FOC

Freight Operating Company

### Managed Station

19 major stations in the UK are not only owned but also managed by Network Rail and are called so to distinguish them from the franchised stations that are managed by the SFOs.

### ORR

The Office of Rail Regulation is the independent safety and economic regulator for Britain's railways. [www.rail-reg.gov.uk](http://www.rail-reg.gov.uk)

### OHLE / OLE

Over Head Line Equipment refers to the electrification lines of trains that occur above the track and over the train.

### PPM

The Public Performance Measure shows the percentage of trains which arrive at their terminating station on time.

### PRM TSI

'Persons with Reduced Mobility -Technical Specification for Interoperability' is a European standard which provides the

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accessibility requirements of rail vehicles and railway stations. The TSI's apply to the entire UK rail network with the exception of the exclusions listed on the DfT web-site.

### **RDG**

The Rail Delivery Group is an association of Train Operating Companies, representing the TOCs in the UK.

### **RRD**

Route Requirement Document is the project brief. This was previously known as project requirement specification (PRS).

### **RIDDOR**

Reporting of Injuries, Diseases and Dangerous Occurrences Regulations are published by the Health and Safety Executive.

### **Route asset manager (RAM)**

Route asset managers are responsible for defining the scope of work via the PRS. They participate in the selection and approval of the selected design (AiP form 001) as they will be eventually in charge of the new infrastructure.

### **RSSB**

The Rail Standards and Safety Board measure safety performance and analyse risk for the UK rail industry, and publishes Railway Group Standards. [www.rssb.co.uk](http://www.rssb.co.uk)

### **SFAIRP**

An acronym for " So Far As Is Reasonably Practicable ". Reasonably practicable involves weighing a risk against the trouble, time and money needed to control it.

[www.hse.gov.uk/risk/theory/alarpqlance.htm](http://www.hse.gov.uk/risk/theory/alarpqlance.htm)

### **SFO or TOC**

Usually the Station Facilities Operator or Train Operating Company franchises the station from Network Rail and is legally responsible for its operation. Hence it has a major interest in all design stages.

In managed stations, it is not uncommon for Network Rail to be the operator of the station (the SFO) that provides service to a number of train operators (TOCs) using the station.

### **Station category**

The DfT's station categorisation reflects the number of passengers using the station and the importance of the station.

## Appendix B- Applicable legislation, standards & guidance

<b><u>Legislation:</u></b>	
DfT code of practice	'Design Standards for Accessible Railway Stations'. (2015) Previously 'Accessible Train and Station Design for Disabled People'
The Building Regulations	The Building Act (1984) Approved Document parts A to P
Scottish Building Standards	Technical Handbook Non Domestic (2013)
TSI PRM	Technical Specification for Interoperability : Accessibility for Persons with Reduced Mobility for High Speed and -Conventional Lines on the Trans- European Rail Network
BS 8300	Design of Buildings and their Approaches to meet the needs of Disabled People-Code of Practice
Government Equalities Office	Equality Act (2010)
CDM Regulations	Construction and Design Management Regulations (2007)

### **NR Guidelines:**

	Station Capacity Assessment Guidance (2011)
	Station Design Principles for Network Rail (2014)
	Inclusive Design Strategy (2015)
	Managed Stations Way-finding (2011)
	Station Flooring Guidance & Floor Selection (2014)
	Station Safety Policy (2015)
	Operational Property Design & Construction Handbook (2010)

### **Other Guidelines:**

ATOC	National Rail & Underground CCTV Guidance (2010)
CAE	Access Audit Handbook (2013)
DfT	Better Rail Stations (2009)
DfT	Inclusive Mobility (2011)
HSE	Workplace (Health, Safety and Welfare) Regulations 1992.
HSE	HSG65 - Managing for health and safety (2013)
RNIB	Building Sight
RSSB	Station Capacity

RSSB	Wayfinding at Stations Good Practice Guide
TfL	Interchange Best Practice Guidelines (2009)

### **NR Standards:**

NR/L2/CIV/003	Engineering Assurance of Building & Civils Engineering works-
NR/GN/TEL/50017	CCTV for Stations (2006)
NR/L3/CIV/060	CIS Information (2009)
NR/L2/TEL/30130	Electronic Visual CIS (2009)
NR/E/G/00027	Incorporating Ergonomics Guidance Note
NR/L2/ERG/24020	Engineering assurance requirements for Ergonomics
NR/L2/INI/CP0069	Route Requirement Management & Engineering Remit Production
NR/L1/INI/PM/GRIP/100 NR/L1/INI/PM/GRIP/101	Governance for Railway Investment Projects (GRIP) – Policy Manual and Project Management (Suite of Documents)
NR/L3/OCS/044/FS14K	Managed Stations Environmental Management
NR/L1/FIR/100	Fire Safety Policy

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## Appendix C- Standard Network Rail Ticket Counter Design

### Exclusions

This design does not cover any site specific requirements such as security for example.

It assumes that a glazed separation is required between the staff and the public (not always the case) but it does not cover exceptional risk areas where ballistic protection may be required (as an example for a site specific consideration).

CCTV cover arrangements are not covered here.

The design does not address Fire Resistant specifications that will be site specific depending on location.

The design does not address issues of sales office layout and is restricted to the sales counter layout and the public interface with the ticket hall.

# TICKET OFFICE DESIGN FOR NETWORK RAIL STATIONS



Integration Design Ergonomics Applications Solutions

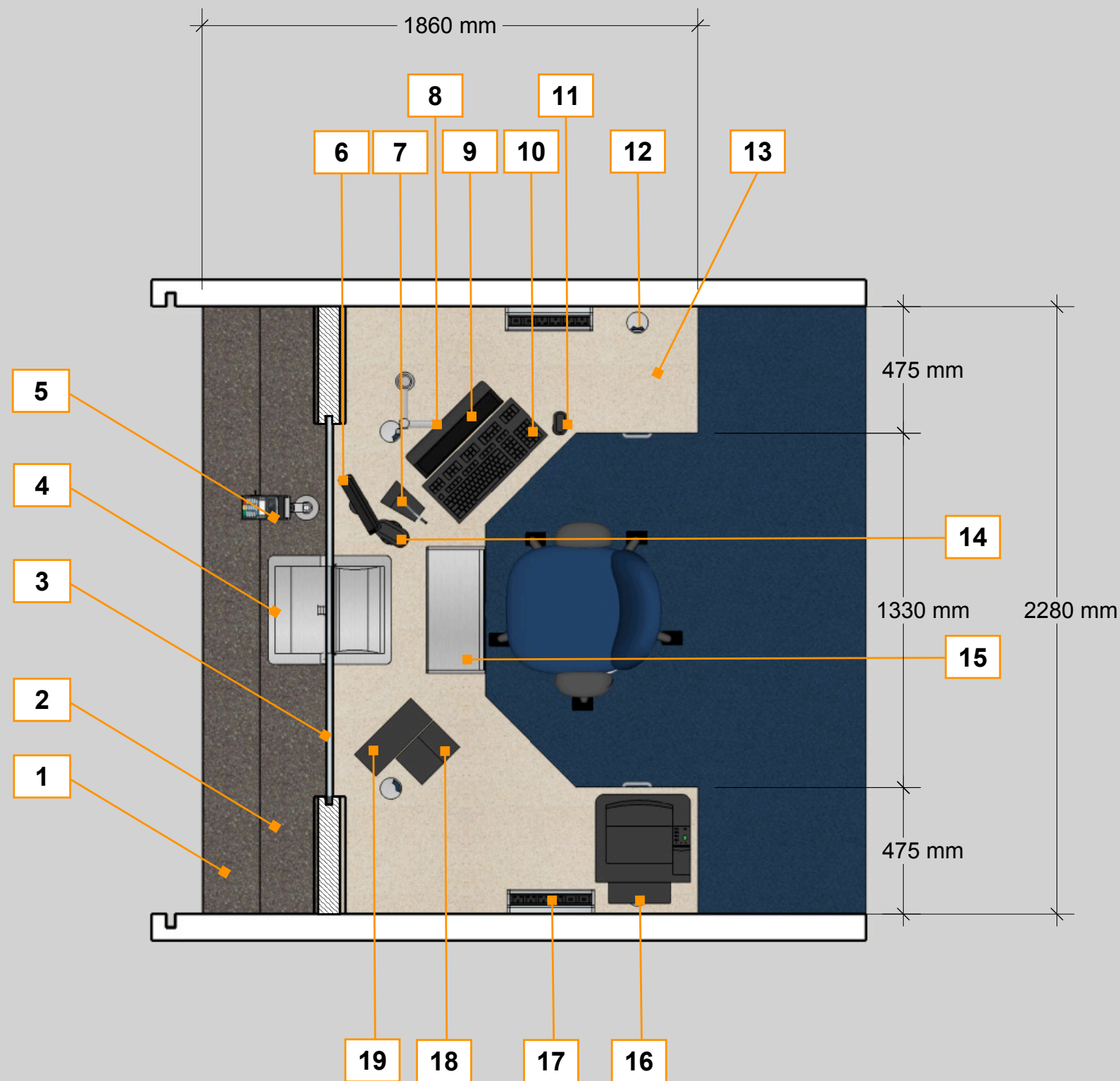
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Client: <b>NETWORK RAIL</b>	Drawn: NTC		DD/MM/YY	REMARKS	
	Date: 15/12/2014		A	--/--/--	
Project: <b>TICKET OFFICE DESIGN FOR NETWORK RAIL STATIONS</b>	Scale:		B	---	
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# Contents

Drg No:	Title	Drawn date	Revision Date
TOD-IDE-002	Single Counter Position	15/12/2014	
TOD-IDE-003	Non-Symmetrical Version for Restricted Access	15/12/2014	
TOD-IDE-004	Exterior and Interior Elevations	15/12/2014	16/02/2015
TOD-IDE-005	Materials and Finishes	15/12/2014	
TOD-IDE-006	Cross Section	15/12/2014	
TOD-IDE-007	3D Visual - Rear Perspective	15/12/2014	
TOD-IDE-008	3D Visual - Front Perspective	15/12/2014	
TOD-IDE-009	Two workstation position	15/12/2014	
TOD-IDE-010	Adjacent 1800mm wide position (showing optional shutters)	15/12/2014	
TOD-IDE-011	Adjacent 1800mm wide position - Perspective view.	15/12/2014	
TOD-IDE-012	Ergonomic visuals	15/12/2014	
TOD-IDE-013	Forward reach at counter level	15/12/2014	
TOD-IDE-014	Power and data distribution	15/12/2014	
TOD-IDE-015	Lighting levels	15/12/2014	
TOD-IDE-016	Photographs - Design For All	15/12/2014	
TOD-IDE-017	Photographs - Design For All	15/12/2014	
TOD-IDE-018	Photographs - Chip & Pin and Cash Drawer	15/12/2014	
TOD-IDE-Spec1	Inventory of Items and Material / Suppliers	15/12/2014	16/02/2015

## Integration Design Ergonomics Applications Solutions

Title: <b>TICKET OFFICE DESIGN</b> Contents		Drg No.: <b>TOD-IDE-001</b>  Drawn: NTC  Date: 15/12/2014  Scale:	Notes:	REVISIONS		<div> PAY WINDOWS &amp; COUNTERS <b>01844 355 474</b> <a href="mailto:ideas.ltd.uk/pwc">ideas.ltd.uk/pwc</a> IDEAS LIMITED <a href="mailto:INFO@IDEAS.LTD.UK">INFO@IDEAS.LTD.UK</a></div>
Client: <b>NETWORK RAIL</b>  Project: <b>TICKET OFFICE DESIGN FOR NETWORK RAIL STATIONS</b>				DD/MM/YY	REMARKS	
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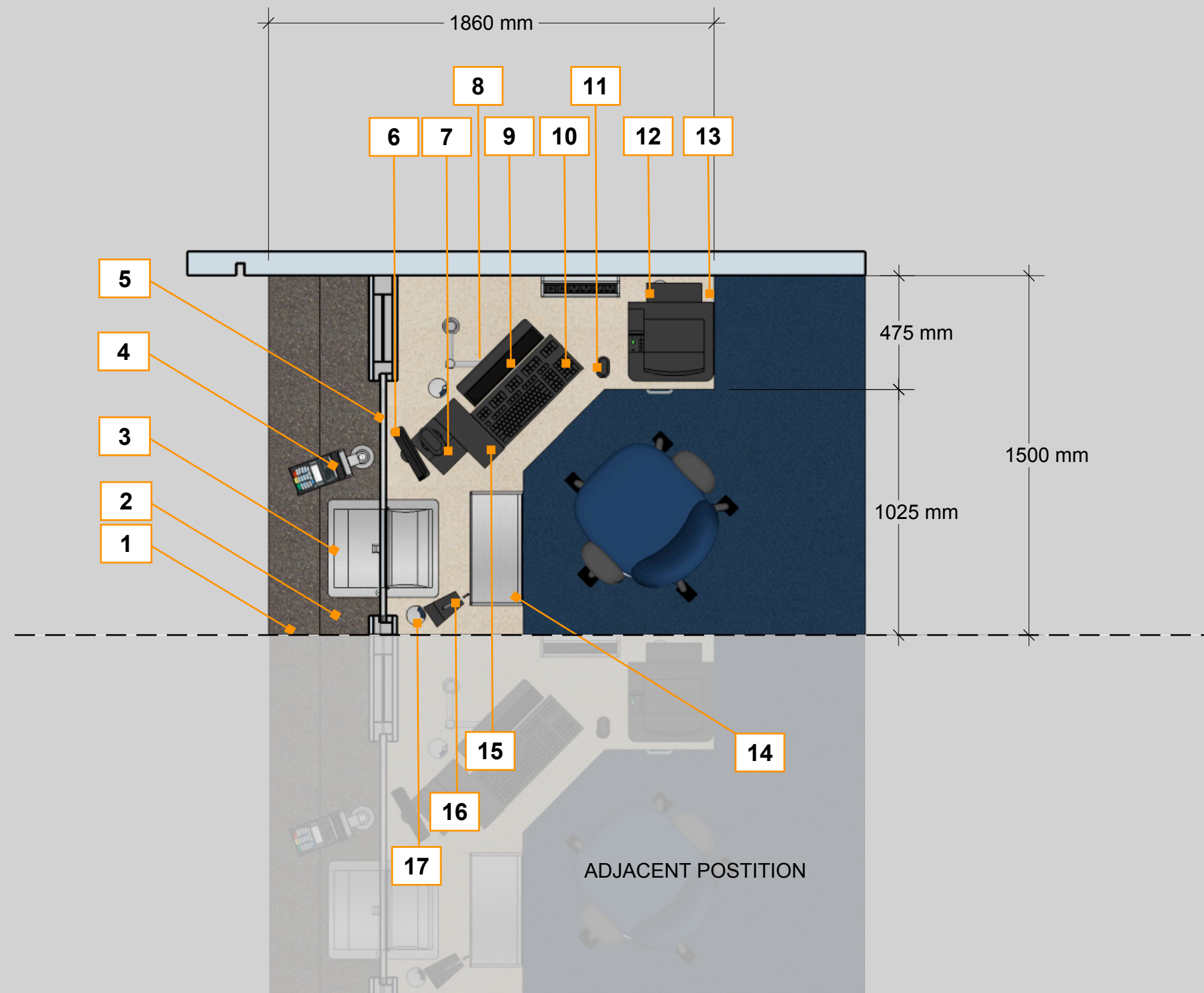
# KEY:

1. Lower counter (750H)\*
2. Upper counter (950H)
3. Glass resistant to manual attack - Code: IDL-0117
4. DFA Cash Tray™ (dual height counter transfer tray) – Code: IDL-0115
5. Ergonomic chip & pin mount – Code: IDL-0116
6. Customer display
7. Staff microphone - Code: IDL-0120
8. Ergonomic monitor arm – Code: IDL-0118
9. Flat screen
10. Keyboard
11. Mouse
12. Cable grommets
13. Non-handed counter top (950H)
14. Scanner
15. Roll top cash drawer – Code: IDL-0119
16. Printer
17. Desk mounted power & data module – Code: IDL-0121
18. Receipt printer
19. Ticket printer

EQUIPMENT SIZES MAY VARY ACCORDING TO  
TOC REQUIREMENTS

## Integration Design Ergonomics Applications Solutions

<b>Title:</b> TICKET OFFICE DESIGN Single Counter Position - Plan View	<b>Drg No.:</b> TOD-IDE-002 <b>Drawn:</b> NTC	<b>Notes:</b>  * Lower counter - finished height at 750mm (the maximum permissible counter height above the floor is 760mm). Under counter minimum knee clearance is 700mm.	REVISIONS		<div> ideas </div> <div> PAY WINDOWS &amp; COUNTERS </div> <div> 01844 355 474 ideas.ltd.uk/pwc </div> <div> IDEAS LIMITED INFO@IDEAS.LTD.UK </div>
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<b>Project:</b> TICKET OFFICE DESIGN FOR NETWORK RAIL STATIONS	<b>Scale:</b> 1:20 @ A3 (Do Not Scale)		A		
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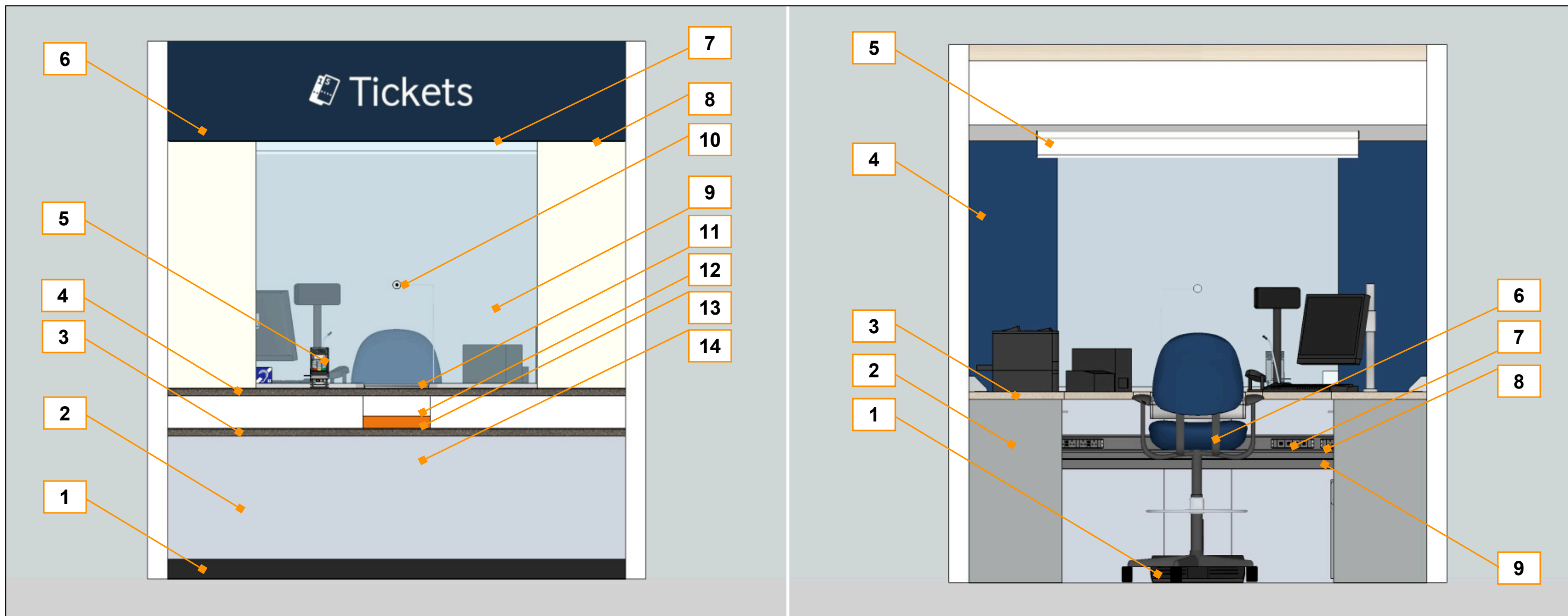
1. Lower counter (750H)\*
2. Upper counter (950H)
3. Ideas DFA Cash Tray™ – Code: IDL-0115
4. Ergonomic chip & pin mount – Code: IDL-0116
5. Glass resistant to manual attack - Code: IDL-0117
6. Customer display
7. Receipt Printer & scanner
8. Ergonomic monitor arm – Code: IDL-0118
9. Flat screen
10. Keyboard
11. Mouse
12. Printer
13. Handed counter top (950H)
14. Roll top cash drawer – Code: IDL-0119
15. Ticket Printer
16. Staff microphone - Code: IDL-0120
17. Cable grommets

A non-symmetrical counter position.  
Right hand version shown with equipment on the right hand side.

1500mm is a suggested minimum usable size, however this is subject site-specific space allocation, detailed site survey, equipment details and storage requirements.

#### Integration Design Ergonomics Applications Solutions

Title: <b>TICKET OFFICE DESIGN</b> <b>Non-symmetrical version for restricted access</b>	Drg No.: <b>TOD-IDE-003</b>	Notes:  * Lower counter - finished height at 750mm (the maximum permissible counter height above the floor is 760mm). Under counter minimum knee clearance is 700mm.	REVISIONS		<div><b>ideas</b>   </div> <div>PAY WINDOWS &amp; COUNTERS</div> <div><b>01844 355 474</b> <a href="http://ideas.ltd.uk/pwc">ideas.ltd.uk/pwc</a></div> <div>IDEAS LIMITED <a href="mailto:INFO@IDEAS.LTD.UK">INFO@IDEAS.LTD.UK</a></div>	
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#### EXTERIOR VIEW:

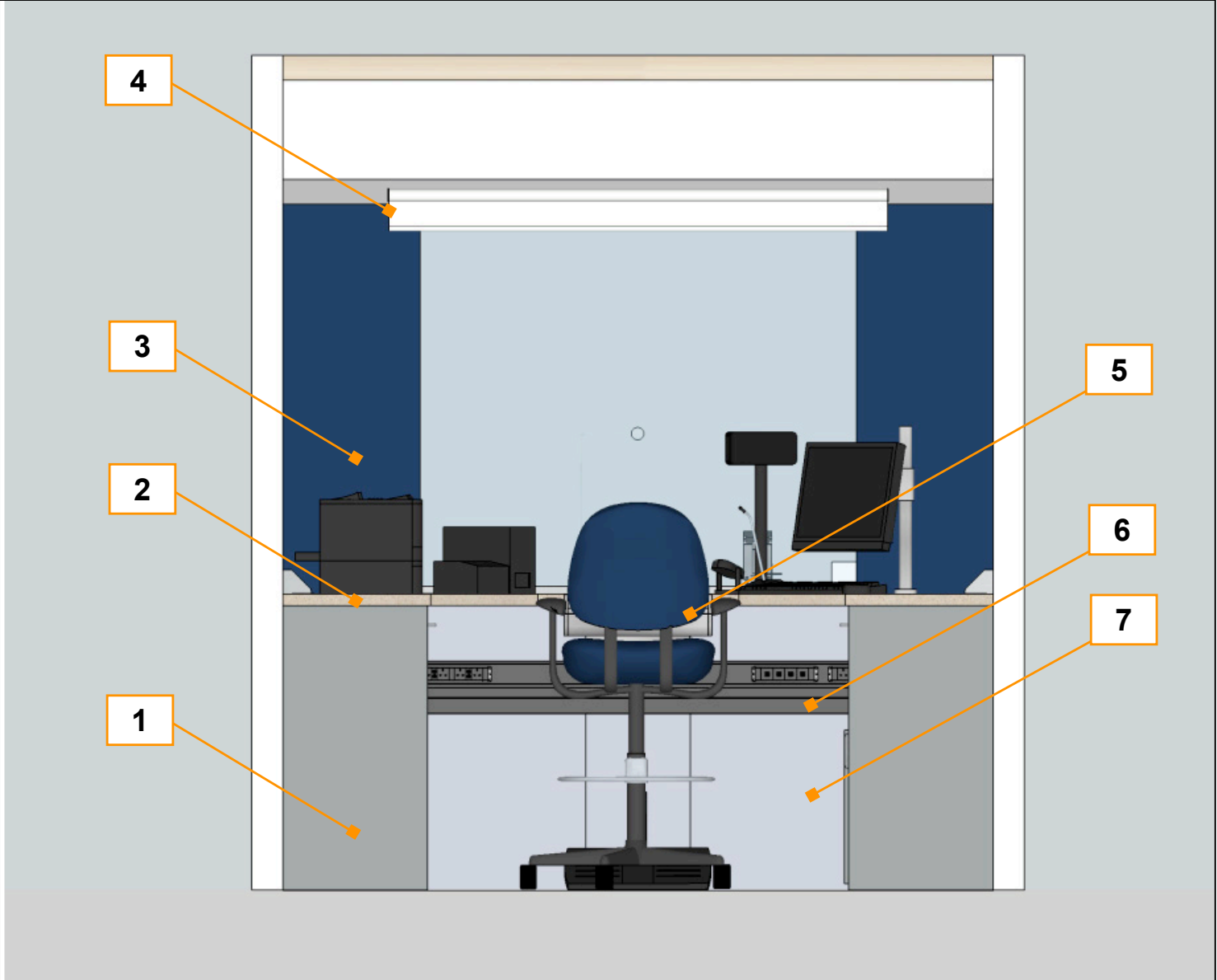
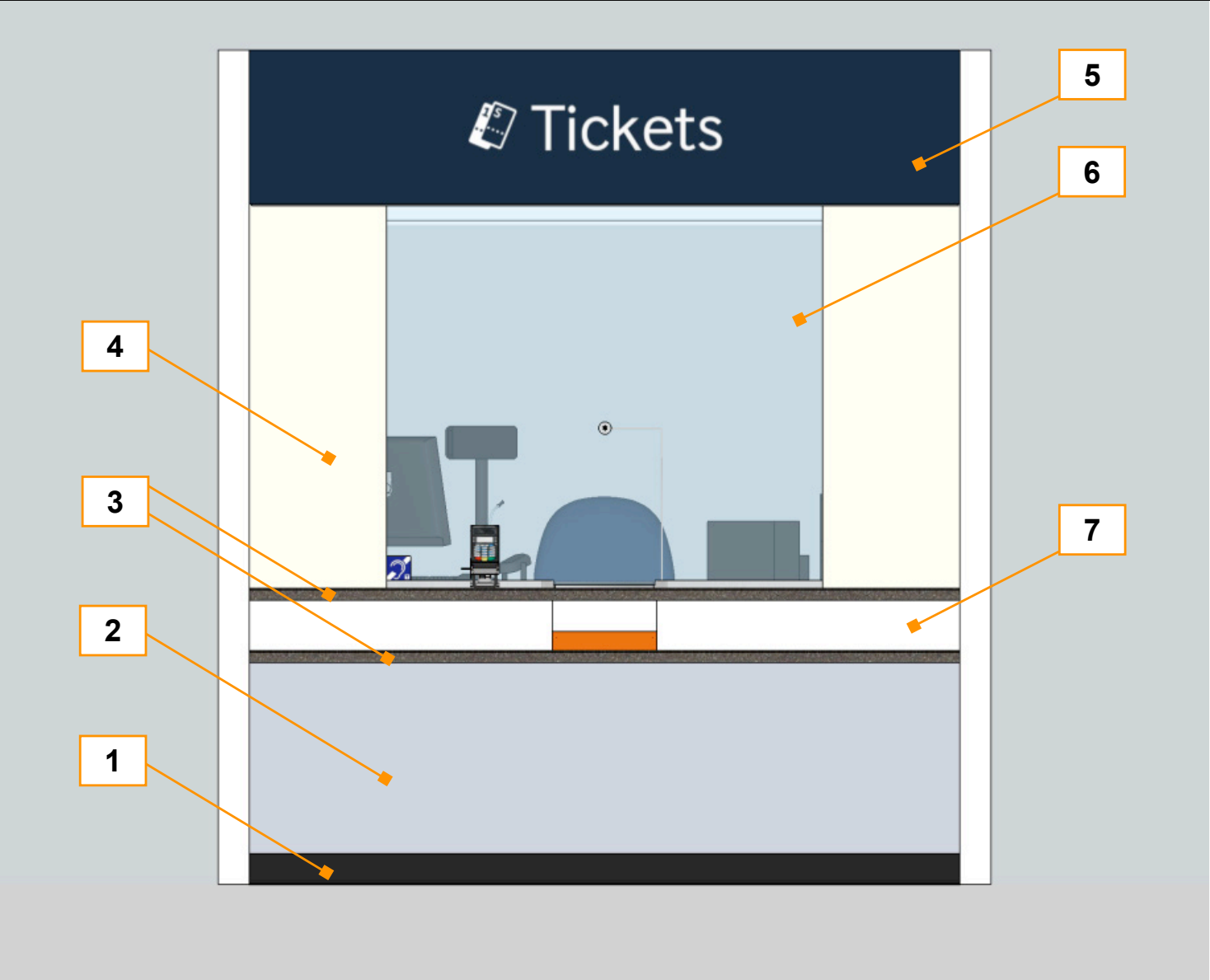
1. Plinth
2. Facia
3. Lower counter (750H)\* - Under counter clearance 700mm minimum
4. Upper counter (950H)
5. Ergonomic chip & pin mount – Code: IDL-0116
6. Bulkhead sign - Code: IDL0134 Soffit with integrated LED down lights and speech transfer speakers Code: IDL-0122
7. Security shutter – Code: IDL-0133
8. LED Down lights – Code: 0122
9. Manual attack window – Code: IDL-0117
10. Customer microphone - Code: IDL-0123
11. Draught excluder – Code: IDL-0143
12. DFA Cash Tray™ (dual height counter transfer tray) – Code: IDL-0115
13. Extending drawer
14. Induction loop

#### INTERIOR VIEW:

1. Adjustable height footrest - Code: IDL-0124
2. Cupboards with lockable top drawer - Code: IDL-0136
3. Counter tops - Code: IDL-0138
4. Pin boards - acoustic panels - Code: IDL-0125
5. Roller blinds 'Position Closed' - Code: IDL-0126
6. Adjustable chair with foot ring - Code: IDL-0130
7. Power sockets - Code: IDL-0128
8. Data sockets - Code: IDL-0129
9. Cable management - 2 compartment segregation - Code: IDL-0127

#### Integration Design Ergonomics Applications Solutions

Title: <b>TICKET OFFICE DESIGN Exterior &amp; interior elevations</b>	Drg No.: <b>TOD-IDE-004</b>	Notes:  * Lower counter - finished height at 750mm (the maximum permissible counter height above the floor is 760mm). Under counter minimum knee clearance is 700mm.	REVISIONS		<div><div>ideas</div><div>PAY WINDOWS &amp; COUNTERS</div><div><div></div><div>01844 355 474 ideas.ltd.uk/pwc</div><div>IDEAS LIMITED INFO@IDEAS.LTD.UK</div></div></div>	
Client: <b>NETWORK RAIL</b>	Drawn: NTC			DD/MM/YY		REMARKS
	Date: 15/12/2014		A	16 / 02 /15		Induction loop item number added.
	Project: <b>TICKET OFFICE DESIGN FOR NETWORK RAIL STATIONS</b>		Scale: 1:20 @ A3 (Do Not Scale)	B		...
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**MATERIALS & FINISHES - EXTERIOR:**

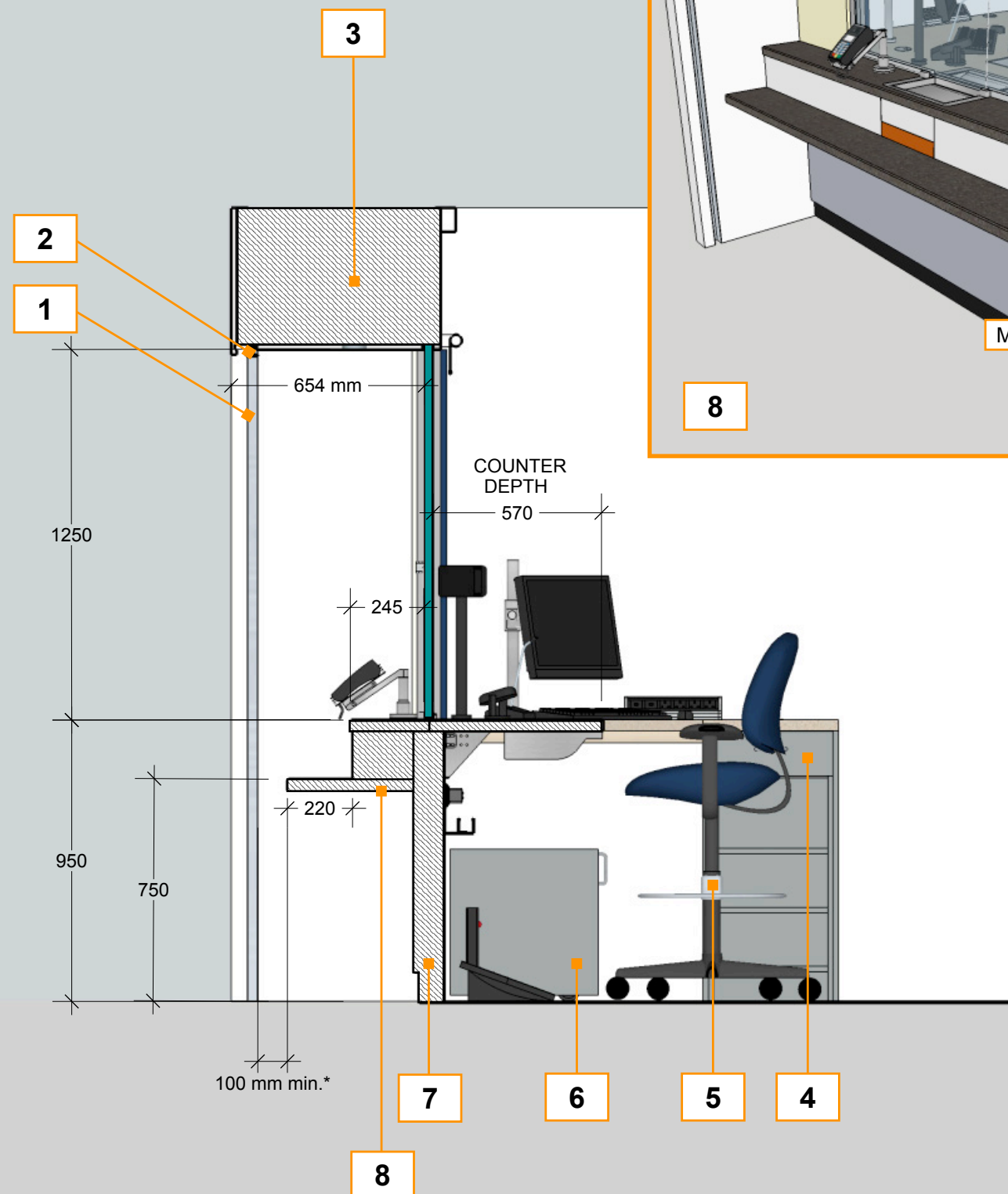
- 1. Plinth - Black polyester powder coated galvanised steel
- 2. Lower fascia - Vitreous enamelled steel panels (9006 (79006SS3) - Semi Gloss)
- 3. Counters - Solid surface (Corian Canyon) - satin finish.
- 4. Side panels - Vitreous enamelled steel panels (708B15SS3-Semi Gloss)
- 5. Signage - Vitreous enamel steel panels
- 6. Manual attack security glass - Fire Resistant (CF628) - P8B/BR1 - 18.5 thick
- 7. Panel between counters: White - Compact grade laminate (Formica).

**MATERIALS & FINISHES - INTERIOR:**

- 1. Cupboards - High pressure laminae (HPL) bonded board (FR)
- 2. Counters - Solid surface (Corian Aurora) - satin finish
- 3. Pin boards (acoustic panels). Fabric wrapped Sundeala - (FR)
- 4. Roller Blinds - screen printed: 'Position Closed' (FR fabric)
- 5. Cash tray & cash drawer – polyesters powder coated steel
- 6. Cable Management - polyester powder coated steel
- 7. Lower fascia - High pressure laminae (HPL) bonded board (FR)

**Integration Design Ergonomics Applications Solutions**

Title: <b>TICKET OFFICE DESIGN</b> <b>Materials &amp; finishes</b>	Drg No.: <b>TOD-IDE-005</b>	Notes:  It is important that the finished floor levels are the same levels both sides of the counter (internal and external) with no discrepancies, because the specified finished counter heights must be maintained.	REVISIONS		<div><b>ideas</b> PAY WINDOWS &amp; COUNTERS</div> <div><b>01844 355 474</b> <a href="http://ideas.ltd.uk/pwc">ideas.ltd.uk/pwc</a></div> <div>IDEAS LIMITED <a href="mailto:INFO@IDEAS.LTD.UK">INFO@IDEAS.LTD.UK</a></div>		
Client: <b>NETWORK RAIL</b>	Drawn: NTC			DD/MM/YY		REMARKS	
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	Project: <b>TICKET OFFICE DESIGN FOR NETWORK RAIL STATIONS</b>		Scale: 1:20 @ A3 (Do Not Scale)	B			...
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# KEY:

1. Recessed shutter track
2. Security roller shutter - Code: IDL-0133
3. Soffit with integrated LED down lights and speech transfer speakers Code: IDL-0122  
Note: The depth of a soffit with a security shutter is governed by this distance between the lower counter and the shutter track. It should be a minimum of 100mm to allow the shutter to clear the chip & pin arm if left in its lowest position.  
  
The depth of a soffit without a security shutter would be site specific but it is recommended that the front face would be in line with the lower counter with soffit lights placed centrally.
4. Optional cash float drawer unit and storage unit for CPU/UPS equipment - Code: IDL-0137
5. Adjustable chair with foot ring - Code: IDL-0130
6. Optional CPU/UPS mobile unit - Code: IDL-0131
7. Supporting low wall with intruder protection and thermal insulation
8. Lower counter cantilevered from low wall structure using discreet metal brackets supporting a concealed metal frame within the counter construction to avoid bowing. Fixture of lower counter has to be able to support heavy human loads (and vandalism) without damage and permanent deflection.


\* Subject to chip & pin arm extension distance but should not be less than 50mm

## Integration Design Ergonomics Applications Solutions

Title: <b>TICKET OFFICE DESIGN</b> <b>Cross section</b>	Drg No.: <b>TOD-IDE-006</b>	Notes:  It is important that the finished floor levels are the same levels both sides of the counter (internal and external) with no discrepancies, because the specified finished counter heights must be maintained.	REVISIONS		<div><div>ideas</div><div>PAY WINDOWS &amp; COUNTERS</div><div>01844 355 474 ideas.ltd.uk/pwc</div><div>IDEAS LIMITED INFO@IDEAS.LTD.UK</div></div>	
Client: <b>NETWORK RAIL</b>	Drawn: NTC		DD/MM/YY	REMARKS		
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	Project: <b>TICKET OFFICE DESIGN FOR NETWORK RAIL STATIONS</b>		Scale: 1:20 @ A3 (Do Not Scale)	B		...
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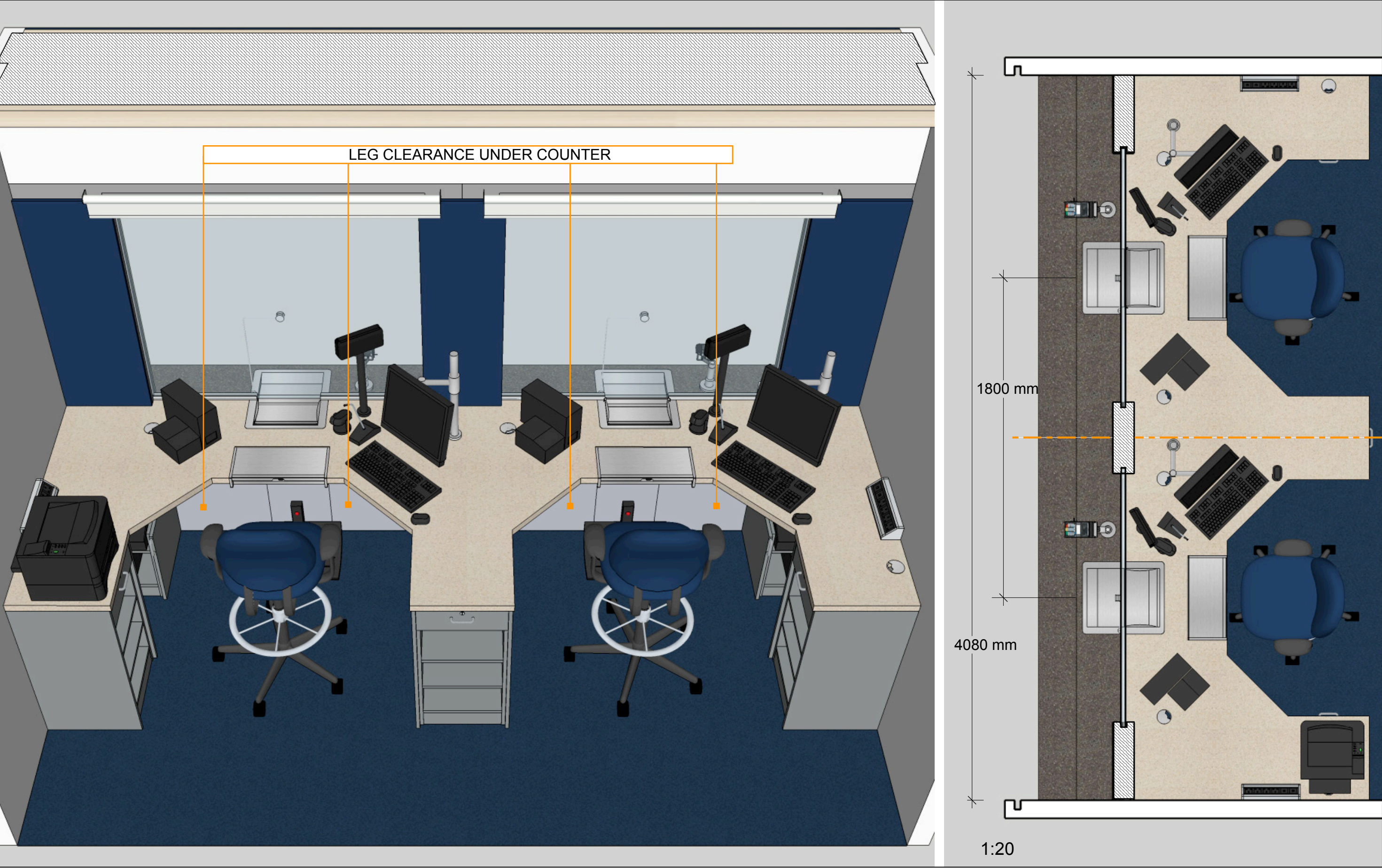
# Integration Design Ergonomics Applications Solutions

Title: <b>TICKET OFFICE DESIGN</b> <b>3D visual - Rear perspective</b>	Drg No.: <b>TOD-IDE-007</b>	Notes:  It is important that the finished floor levels are the same levels both sides of the counter (internal and external) with no discrepancies, because the specified finished counter heights must be maintained.	REVISIONS		<div><b>ideas</b>    <small>PAY WINDOWS &amp; COUNTERS</small> <b>01844 355 474</b> <a href="http://ideas.ltd.uk/pwc">ideas.ltd.uk/pwc</a> <small>IDEAS LIMITED INFO@IDEAS.LTD.UK</small></div>		
Client: <b>NETWORK RAIL</b>	Drawn: NTC			DD/MM/YY		REMARKS	
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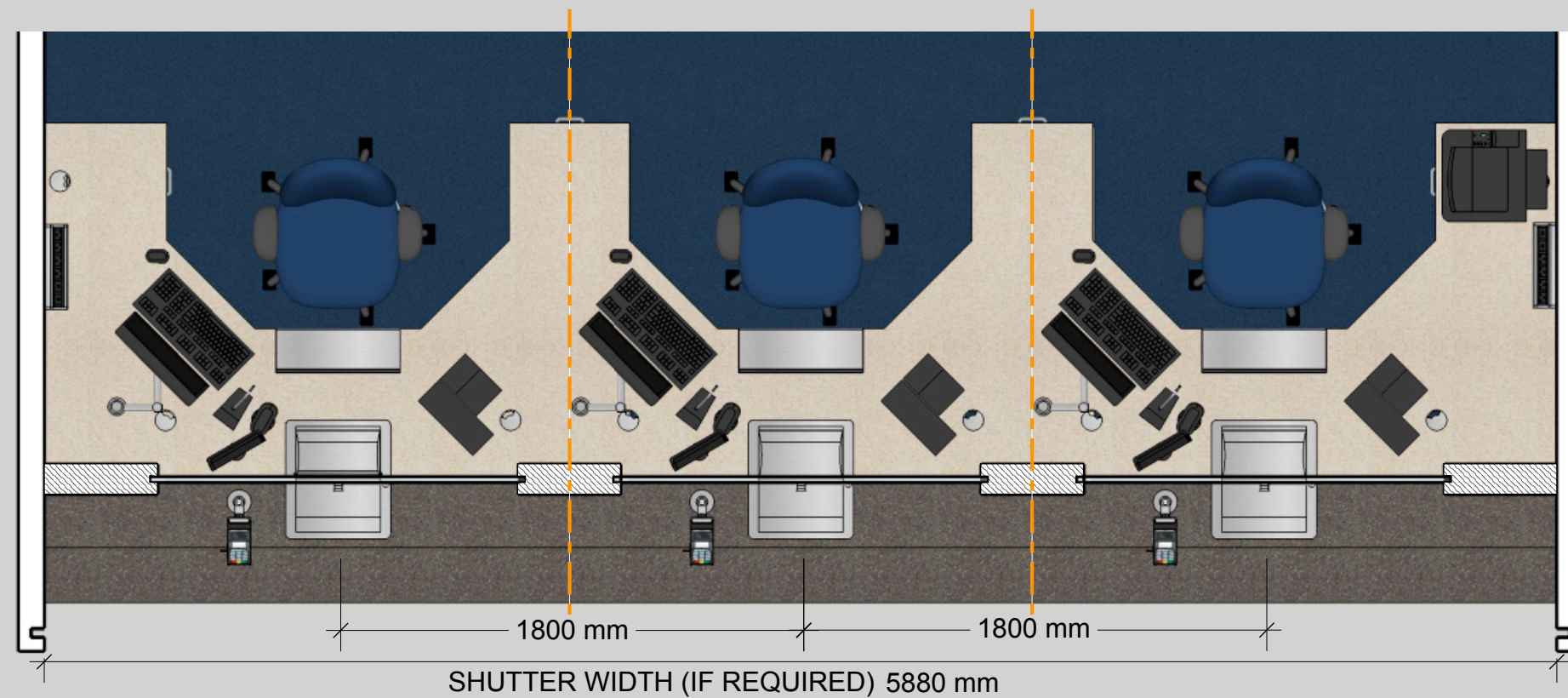
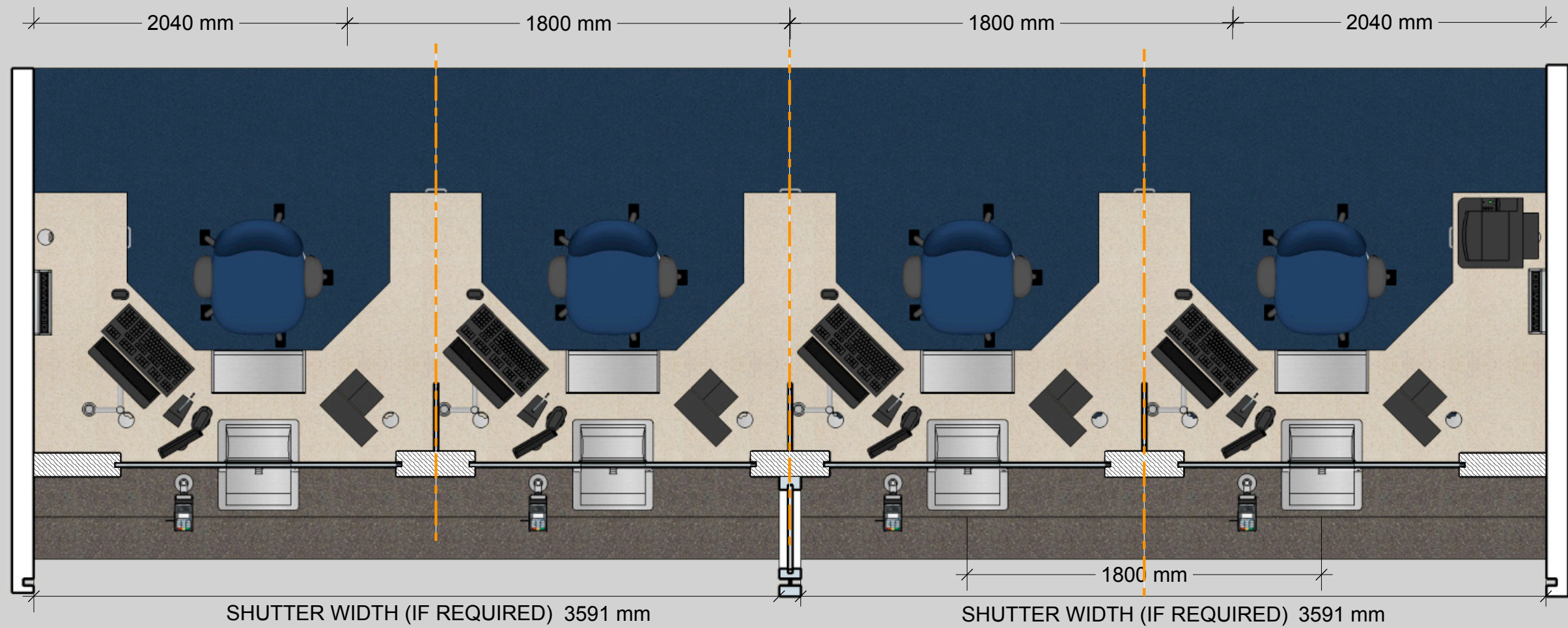
Integration Design Ergonomics Applications Solutions

Title: <b>TICKET OFFICE DESIGN</b> 3D visual - Front perspective		Drg No.: <b>TOD-IDE-008</b>  Drawn: NTC  Date: 15/12/2014  Scale: NTS	Notes:  It is important that the finished floor levels are the same levels both sides of the counter (internal and external) with no discrepancies, because the specified finished counter heights must be maintained.	REVISIONS		<div><b>ideas</b>   </div> <div>PAY WINDOWS &amp; COUNTERS</div> <div><b>01844 355 474</b> <a href="http://ideas.ltd.uk/pwc">ideas.ltd.uk/pwc</a></div> <div>IDEAS LIMITED <a href="mailto:info@ideas.ltd.uk">INFO@IDEAS.LTD.UK</a></div>
Client: <b>NETWORK RAIL</b>				DD/MM/YY	REMARKS	
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Integration Design Ergonomics Applications Solutions

Title: <b>TICKET OFFICE DESIGN</b> <b>Two workstation position</b>	Drg No.: <b>TOD-IDE-009</b>	Notes:  It is important that the finished floor levels are the same levels both sides of the counter (internal and external) with no discrepancies, because the specified finished counter heights must be maintained.	REVISIONS		<div></div> <div><b>ideas</b> PAY WINDOWS &amp; COUNTERS</div> <div><b>01844 355 474</b> <a href="http://ideas.ltd.uk/pwc">ideas.ltd.uk/pwc</a></div> <div>IDEAS LIMITED <a href="mailto:INFO@IDEAS.LTD.UK">INFO@IDEAS.LTD.UK</a></div>
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### Integration Design Ergonomics Applications Solutions

Title: <b>TICKET OFFICE DESIGN</b> <b>Adjacent 1800mm wide positions (with optional shutters)</b>		Drg No.: <b>TOD-IDE-010</b>	Notes:  It is important that the finished floor levels are the same levels both sides of the counter (internal and external) with no discrepancies, because the specified finished counter heights must be maintained.	REVISIONS		<div><div>ideas</div><div>PAY WINDOWS &amp; COUNTERS</div><div>01844 355 474 ideas.ltd.uk/pwc</div><div>IDEAS LIMITED INFO@IDEAS.LTD.UK</div></div> <div></div>
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# Integration Design Ergonomics Applications Solutions

Title: **TICKET OFFICE DESIGN**  
Adjacent 1800mm wide positions - Perspective view

Client: **NETWORK RAIL**

Project: **TICKET OFFICE DESIGN FOR NETWORK RAIL STATIONS**

Drg No.: **TOD-IDE-011**

Drawn: NTC

Date: 15/12/2014

Scale: NTS

## Notes:

It is important that the finished floor levels are the same levels both sides of the counter (internal and external) with no discrepancies, because the specified finished counter heights must be maintained.

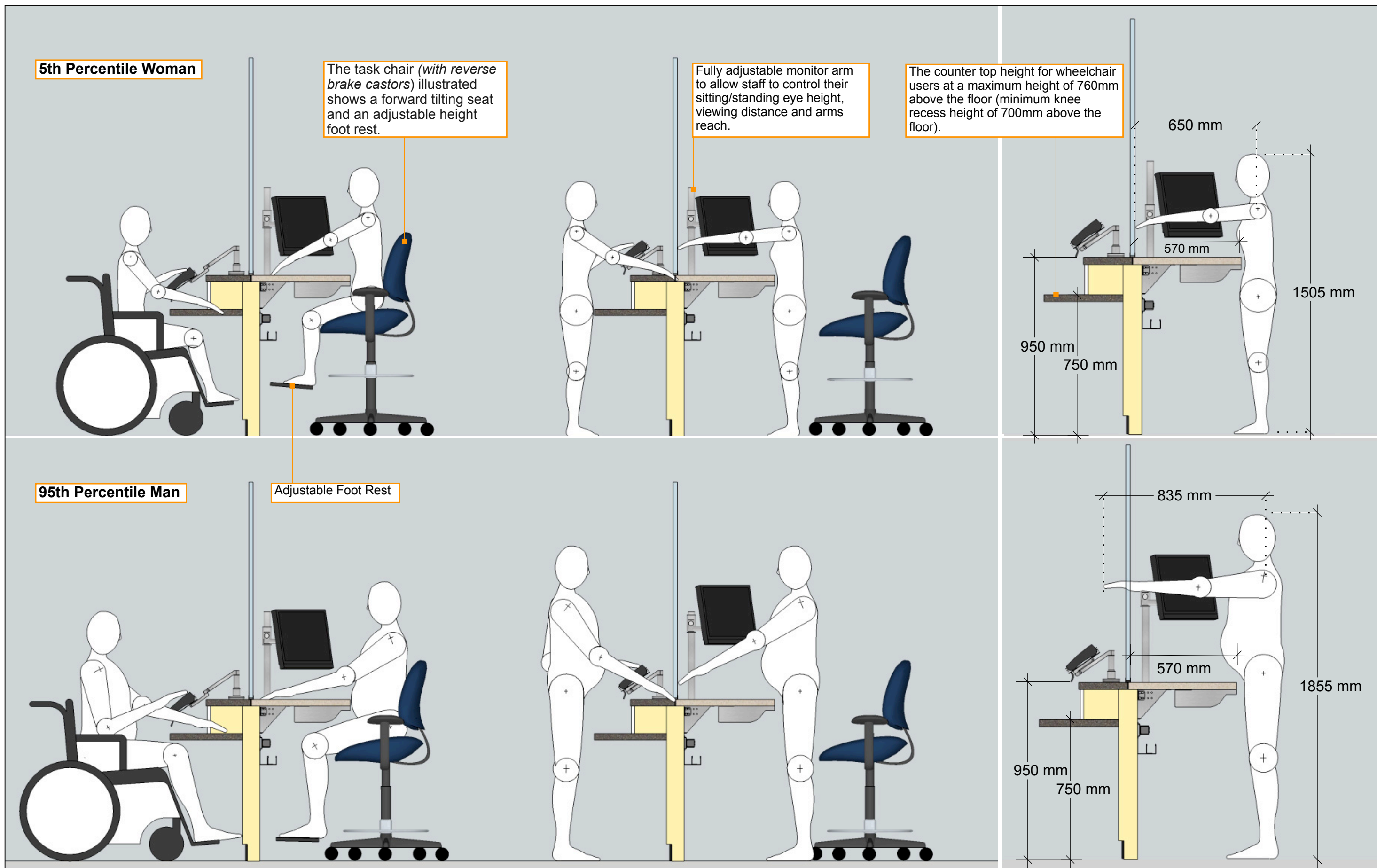
## REVISIONS

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PAY WINDOWS & COUNTERS

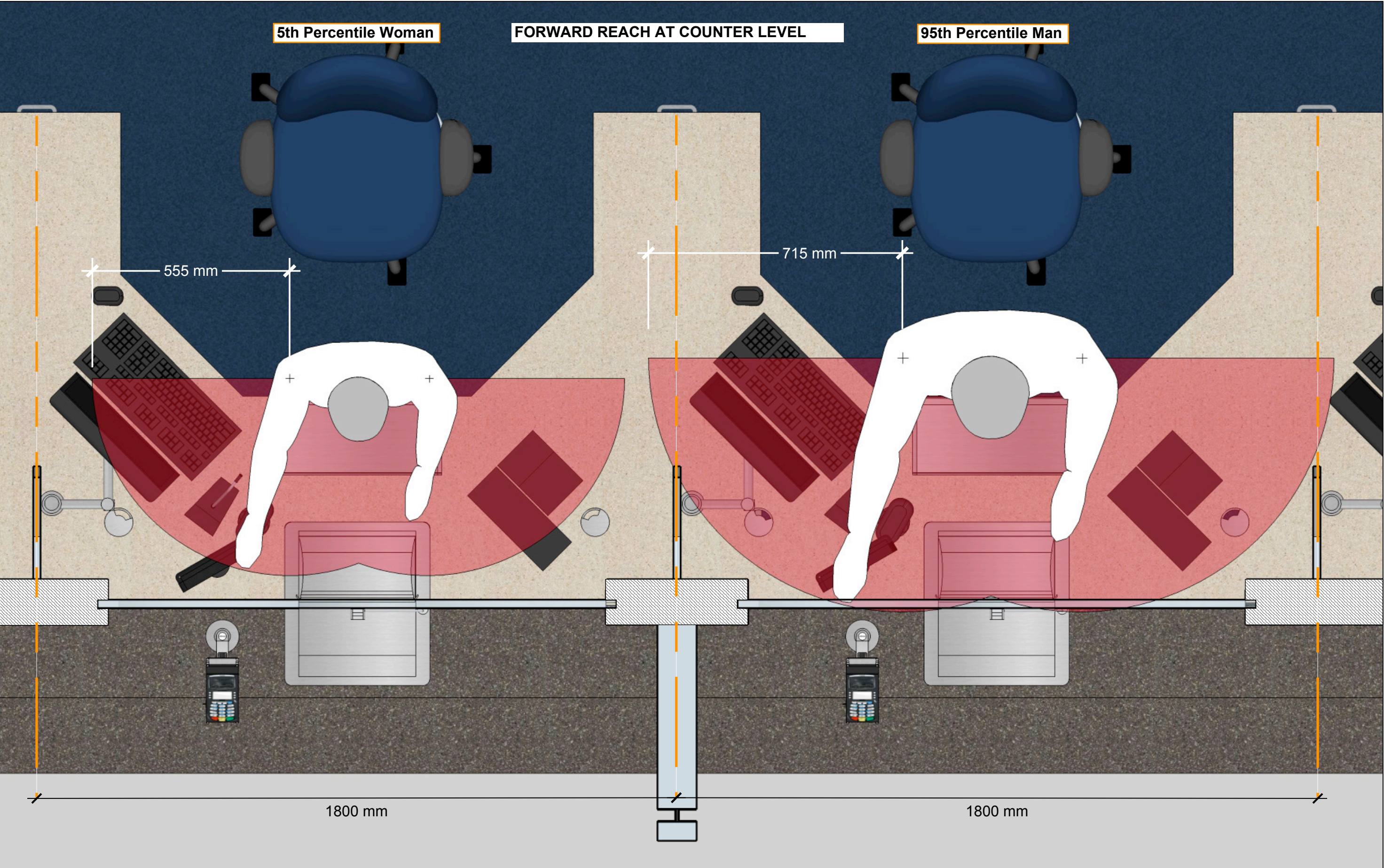
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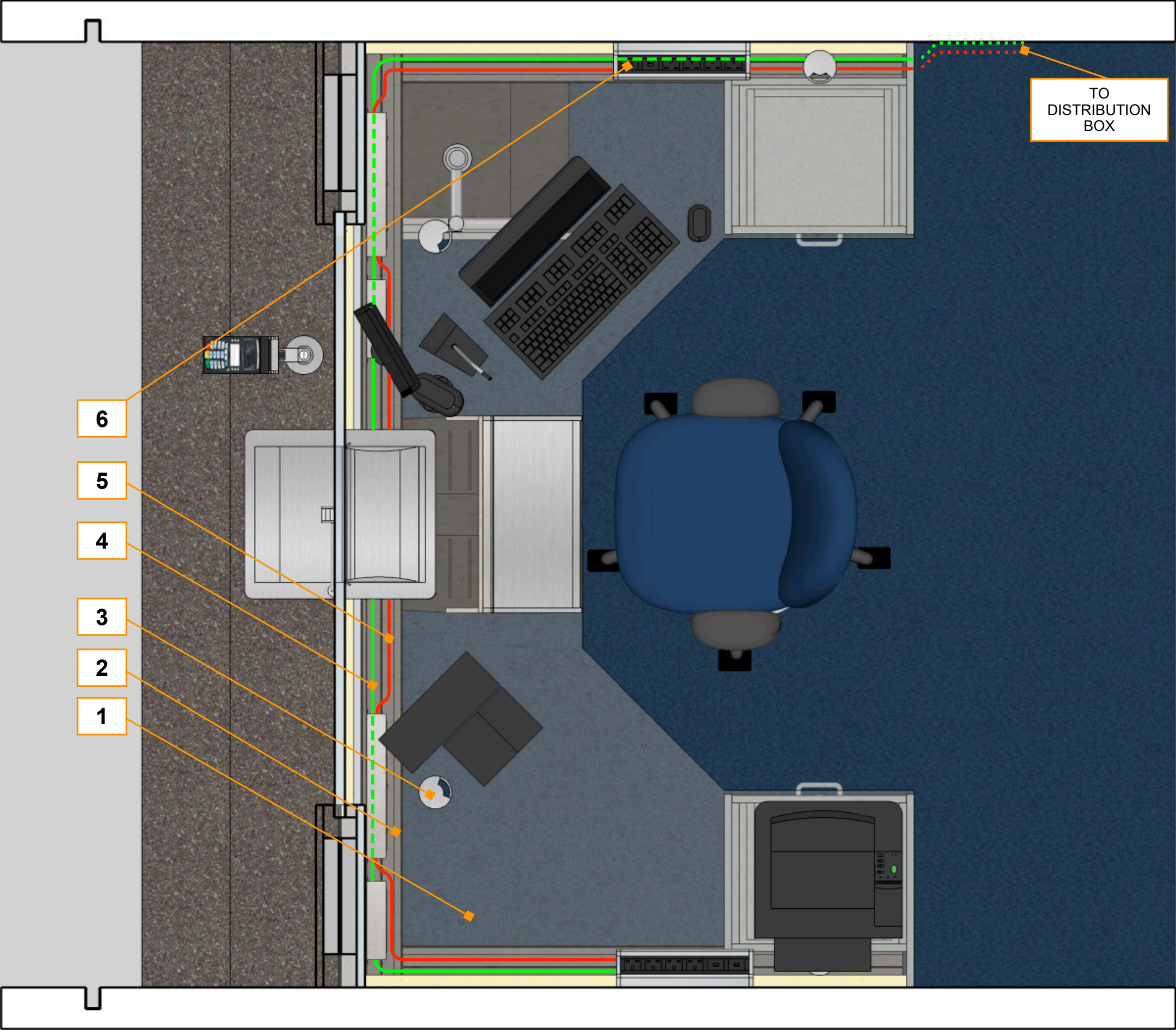
# Integration Design Ergonomics Applications Solutions

Title: <b>TICKET OFFICE DESIGN Ergonomic visuals</b>	Drg No.: <b>TOD-IDE-012</b>	Notes: Data: Pheasant, S. and Haslegrave, C.M. (2006). <i>Bodyspace - Anthropometry, Ergonomics and the Design of Work</i> . Florida: Taylor and Francis	REVISIONS		<div><div>ideas</div><div>PAY WINDOWS &amp; COUNTERS</div><div>01844 355 474 ideas.ltd.uk/pw</div><div>IDEAS LIMITED INFO@IDEAS.LTD.UK</div></div> <div><div><div><div></div><div></div><div></div></div><div><div></div><div></div><div></div></div><div><div></div><div></div><div></div></div></div></div>		
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Integration Design Ergonomics Applications Solutions

Title: <b>TICKET OFFICE DESIGN</b> Forward reach at counter level	Drg No.: <b>TOD-IDE-013</b>  Drawn: NTC  Date: 15/12/2014  Scale: 1:10 @ A3 (Do Not Scale)	Notes: Data: Pheasant, S. and Haslegrave, C.M. (2006). <i>Bodyspace - Anthropometry, Ergonomics and the Design of Work</i> . Florida: Taylor and Francis	REVISIONS		<div> </div> <div>PAY WINDOWS &amp; COUNTERS</div> <div><b>01844 355 474</b> <a href="http://ideas.ltd.uk/pwc">ideas.ltd.uk/pwc</a></div> <div>IDEAS LIMITED <a href="mailto:INFO@IDEAS.LTD.UK">INFO@IDEAS.LTD.UK</a></div>
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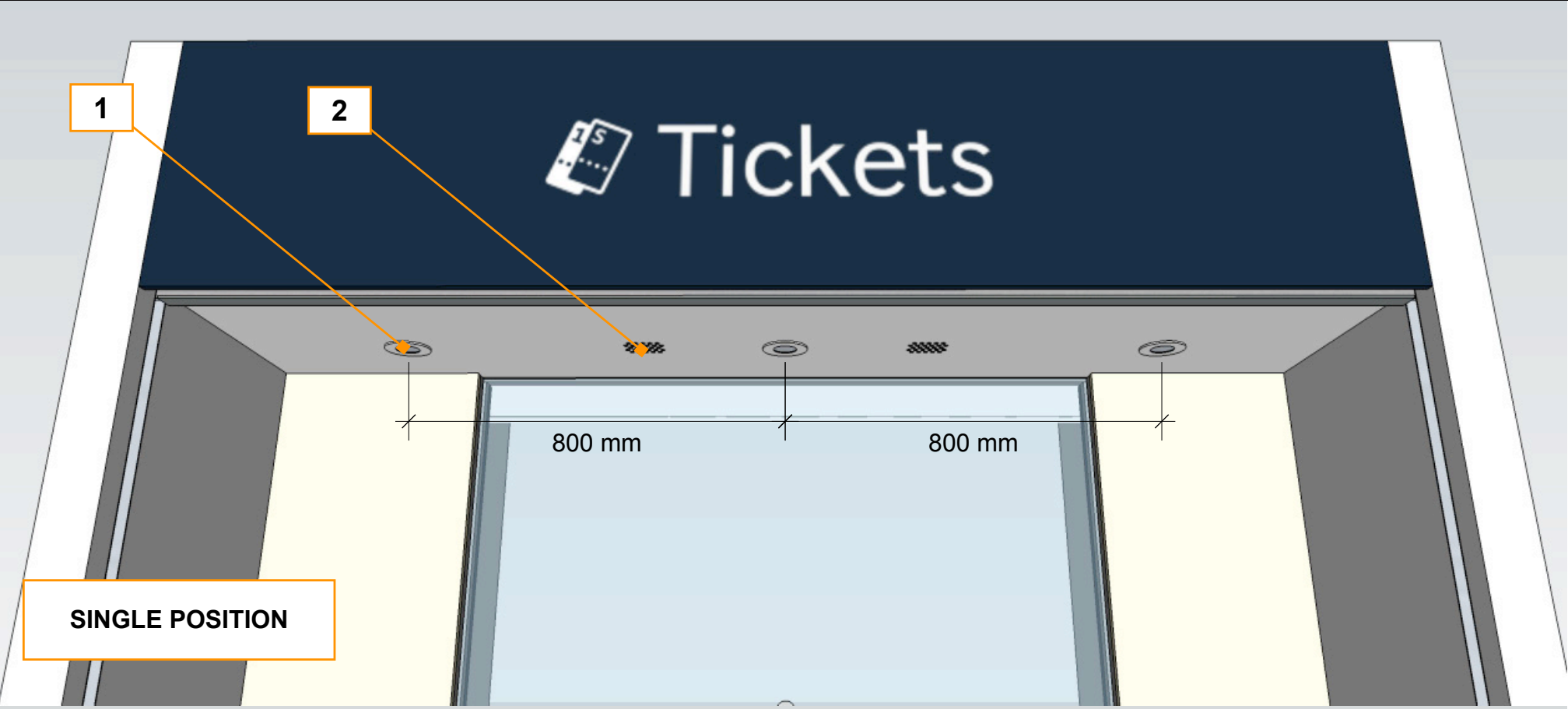
- KEY:**
- 1. Counter top (shown transparent)
  - 2. Cable management - 2 compartment segregation - Code: IDL-0127
  - 3. Counter top cable grommets
  - 4. Data cable
  - 5. Power cable
  - 6. Desk mounted power & data module - Code: IDL-0121

Integration Design Ergonomics Applications Solutions

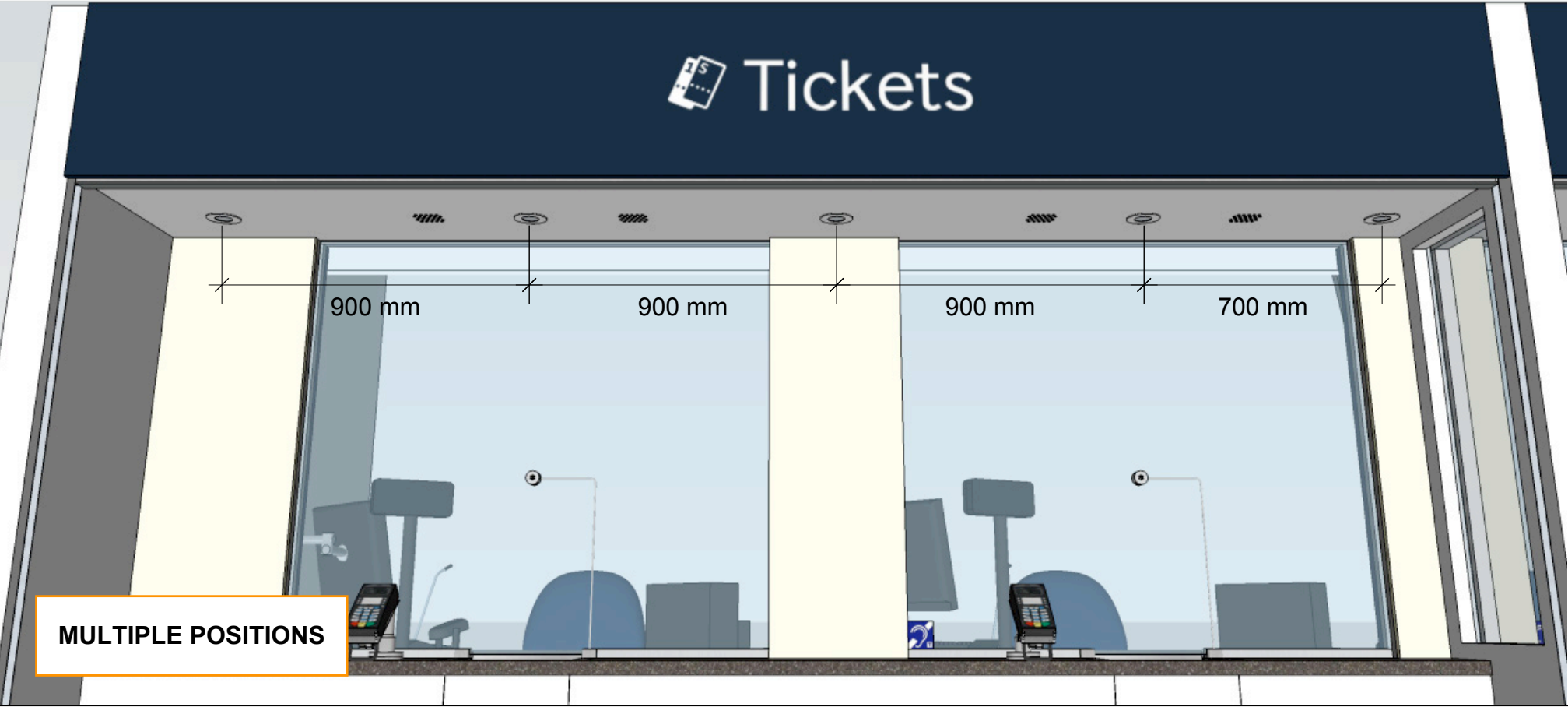
Title: <b>TICKET OFFICE DESIGN Power &amp; Data Distribution</b>	Drg No.: <b>TOD-IDE-014</b>	Notes:  It is important that the finished floor levels are the same levels both sides of the counter (internal and external) with no discrepancies, because the specified finished counter heights must be maintained.	REVISIONS		<div> PAY WINDOWS &amp; COUNTERS <b>01844 355 474</b> <a href="http://ideas.ltd.uk/pwc">ideas.ltd.uk/pwc</a> IDEAS LIMITED <a href="mailto:INFO@IDEAS.LTD.UK">INFO@IDEAS.LTD.UK</a></div>
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- KEY:**
1. LED Downlighters:
- Inset LED down lights c/w diffuser (ZEP2-Fixed). Fire rated.
- In the illustrated configurations these lamps produce of the order of 500 LUX at counter level (recommended levels).
2. Soffit speech transfer speakers



Integration Design Ergonomics Applications Solutions

Title: <b>TICKET OFFICE DESIGN Lighting Levels</b>	Drg No.: <b>TOD-IDE-015</b>	Notes:  It is important that the finished floor levels are the same levels both sides of the counter (internal and external) with no discrepancies, because the specified finished counter heights must be maintained.	REVISIONS		<div> PAY WINDOWS &amp; COUNTERS <b>01844 355 474</b> <a href="http://ideas.ltd.uk/pwc">ideas.ltd.uk/pwc</a> IDEAS LIMITED <a href="mailto:INFO@IDEAS.LTD.UK">INFO@IDEAS.LTD.UK</a></div>	
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Integration Design Ergonomics Applications Solutions

Title: <b>TICKET OFFICE DESIGN</b> <b>Photographs - Design For All</b>		Drg No.: <b>TOD-IDE-016</b>	Notes:	REVISIONS		<div> PAY WINDOWS &amp; COUNTERS <b>01844 355 474</b> <a href="http://ideas.ltd.uk/pwc">ideas.ltd.uk/pwc</a> IDEAS LIMITED <a href="mailto:INFO@IDEAS.LTD.UK">INFO@IDEAS.LTD.UK</a></div>
Client: <b>NETWORK RAIL</b>		Drawn: NTC		DD/MM/YY	REMARKS	
Project: <b>TICKET OFFICE DESIGN FOR NETWORK RAIL STATIONS</b>		Date: 15/12/2014		A	--/--/-- ...	
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Integration Design Ergonomics Applications Solutions

Title: <b>TICKET OFFICE DESIGN</b> Photographs - Design For All	Drg No.: <b>TOD-IDE-017</b> Drawn: NTC Date: 15/12/2014 Scale: NTS	Notes:	REVISIONS		<b>ideas</b> PAY WINDOWS & COUNTERS 01844 355 474 <a href="http://ideas.ltd.uk/pwc">ideas.ltd.uk/pwc</a> IDEAS LIMITED <a href="mailto:INFO@IDEAS.LTD.UK">INFO@IDEAS.LTD.UK</a>
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Integration Design Ergonomics Applications Solutions

Title: <b>TICKET OFFICE DESIGN</b> <b>Photographs - Extending Chip &amp; Pin Arm and Cash Drawer</b>		Drg No.: <b>TOD-IDE-018</b>  Drawn: NTC  Date: 15/12/2014  Scale: NTS	Notes:	REVISIONS		<div> PAY WINDOWS &amp; COUNTERS <b>01844 355 474</b> <a href="http://ideas.ltd.uk/pwc">ideas.ltd.uk/pwc</a> IDEAS LIMITED <a href="mailto:INFO@IDEAS.LTD.UK">INFO@IDEAS.LTD.UK</a></div>
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INVENTORY OF ITEMS AND MATERIALS/SUPPLIERS		
Ideas Code	Item	Material / Supplier
IDL-0115	DFA Cash Tray Dual height transfer tray.	Ideas Limited.
IDL-0116	Ergonomic chip & pin mount.	Flat screen arms.
IDL-0117	Manual attack window.	Glass resistant to manual attack E356 P8B I Manual 8. Fire Resistant 18.5 thick ESG (Essex Safety Glass).
IDL-0118	Flat screen monitor arm.	Ergonomic monitor arm.  Flatscreen Arms.
IDL-0119	Roll top cash drawer.	Polyester powder coated. Lockable.  Ideas Limited.
IDL-0133	Security shutter.	Electrically operated security roller shutter. Key switch operated. Electric 1ph tube motor. Manual override. Galvanised perforated lath or solid lath. Powder coated finish. Fire rated option available.  Shaw Security
IDL-0123	Customer microphone.	Speech transfer system.  Contacta.
IDL-0124	Induction loop.	Induction loop.  Contacta.
IDL-0138	Counter tops.	Counters - Solid surface faced MDF core. Solid surface finish - 500 Abralon - satin finish - minimal glare. Solid surface by - Corian (Dupont) MDF core - BS EN 13501 Euroclass B - S1, d0. FR (Flame Retardant). Euro Class B, Euro Class C. Class E1 board.  MDF - Medite*

INVENTORY OF ITEMS AND MATERIALS/SUPPLIERS		
Ideas Code	Item	Material / Supplier
IDL-0122	LED down light.	Aurora fire rated LED downlight - non dimmable C/w diffuser.  Quantum Electrical
IDL-0136	Cupboards.	High pressure laminate (HPL) faced MDF. Core material: FR (Flame Retardant) Euro Class B. Euro Class C. Class E1 board. 2mm thick ABS edging.  MDF - Medite.*
IDL-0139	Plinth.	Black - polyester powder coated galvanized steel
IDL-0140	Lower facia panels.	Vitreous enameled steel panels. (9006 - 79006833 - Semi Gloss).
IDL-0141	Side panels.	Vitreous enameled steel panels (708B15SS3-Semi Gloss).
IDL-0134	Signage.	Vitreous enameled steel panels.
IDL-0142	Panels between counters.	Compact grade laminate.  Formica.
IDL-0125	Pin boards / notice boards (acoustic panels).	Fabric wrapped Sundeala - (FR). Core material Sundeala (FR) FRB BS EN 13823 & BS EN 11925 - 2 Camira fabrics - Lucia BS 476 Part 6 Class 0 when FR treated
IDL-0126	Roller blinds - screen printed: 'Position Closed'	Blackout blinds screen printed Fire retardant fabric (FR) - BS 5867 : 2008 Part 2 Type B in accordance with BS EN ISO 15025 : 2002 Procedure.  Finnestra.
IDL-0127	Under counter cable mangement.	Polyester powder coated steel. 2 compartment segregation. Ideas Limited.
IDL-0143	Draught excluder.	Ideas Limited.

\* High specification material that can be downgraded subject to design risk assessment and approval.

### Integration Design Ergonomics Applications Solutions

Title: <b>TICKET OFFICE DESIGN</b> <b>Inventory of Items and Materials / Suppliers</b>	Drg No.: <b>TOD-IDE-Spec1</b>	Notes:	REVISIONS		<div><div>ideas</div><div>PAY WINDOWS &amp; COUNTERS</div><div>01844 355 474 ideas.ltd.uk/pwc</div><div>IDEAS LIMITED INFO@IDEAS.LTD.UK</div></div> <div><div><div><div></div><div></div><div></div></div><div><div></div><div></div><div></div></div><div><div></div><div></div><div></div></div></div></div>	
Client: <b>NETWORK RAIL</b>	Drawn: NTC		DD/MM/YY	REMARKS		
	Date: 15/12/2014		A 16 / 02 /15	Induction loop included. High specification material noted.		
	Project: <b>TICKET OFFICE DESIGN FOR NETWORK RAIL STATIONS</b>		Scale: NTS	B		
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