

COLOUR AND CONTRAST FOR INCLUSIVE DESIGN



OVERVIEW

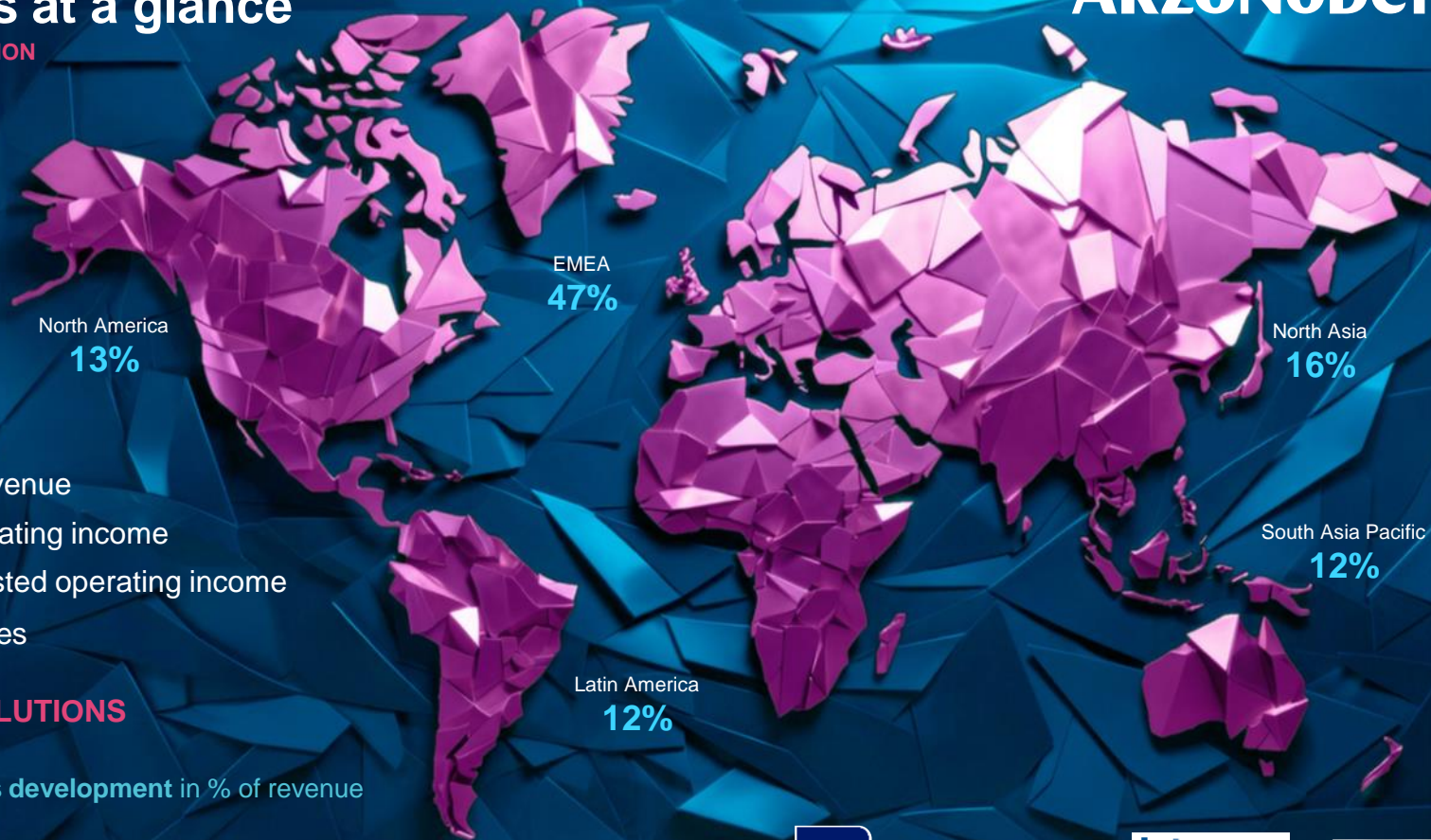
- INTRODUCTION TO AKZONOBEL
- **SEMINAR OBJECTIVES**
- IMPORTANCE OF GOOD DESIGN AND ADEQUATE VISUAL CONTRAST
- **PROJECT RAINBOW, THE EQUALITY ACT AND BUILDINGS REGULATIONS**
- ACHIEVING INCLUSIVE DESIGN WITH COLOUR AND CONTRAST
- **SUMMARY**

Introduction to Akzonobel

2023 results at a glance

REVENUE BY DESTINATION

AkzoNobel



2023 KEY DATA:

€10,668 mln revenue

€1,029 mln operating income

€1,074 mln adjusted operating income

35,200 employees

SUSTAINABLE SOLUTIONS

39%

Sustainable solutions development in % of revenue

39 / 39 / >50

2022 2023 2030

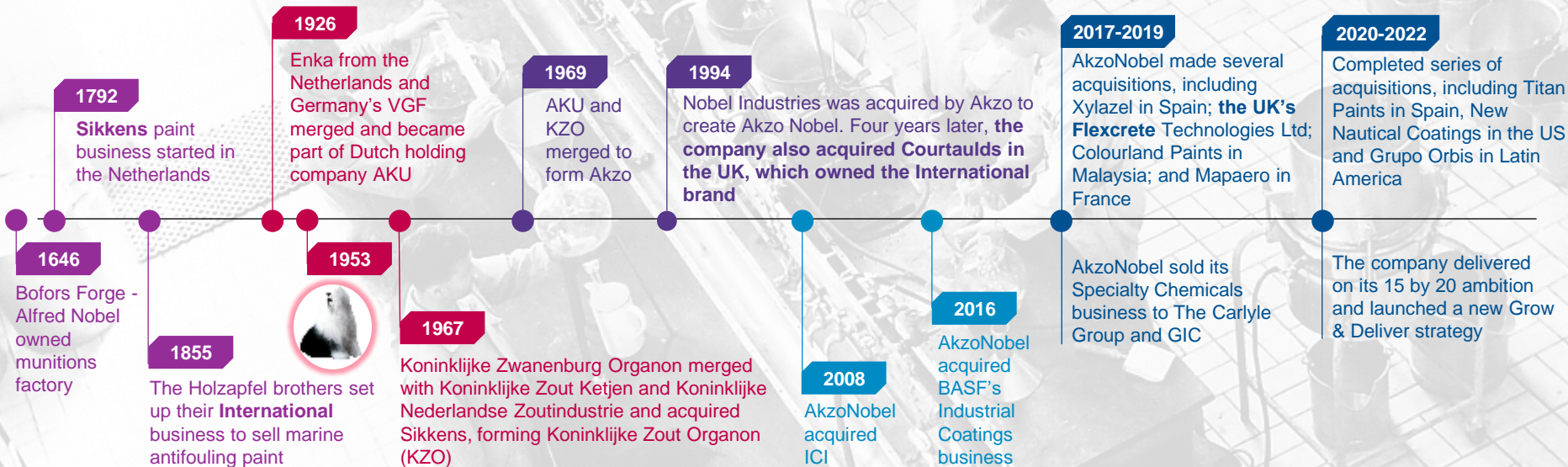


International

Interpon
POWDER COATINGS

sikkens

We've been setting the standard in colour and protection for more than 200 years



AkzoNobel sustainability pyramid

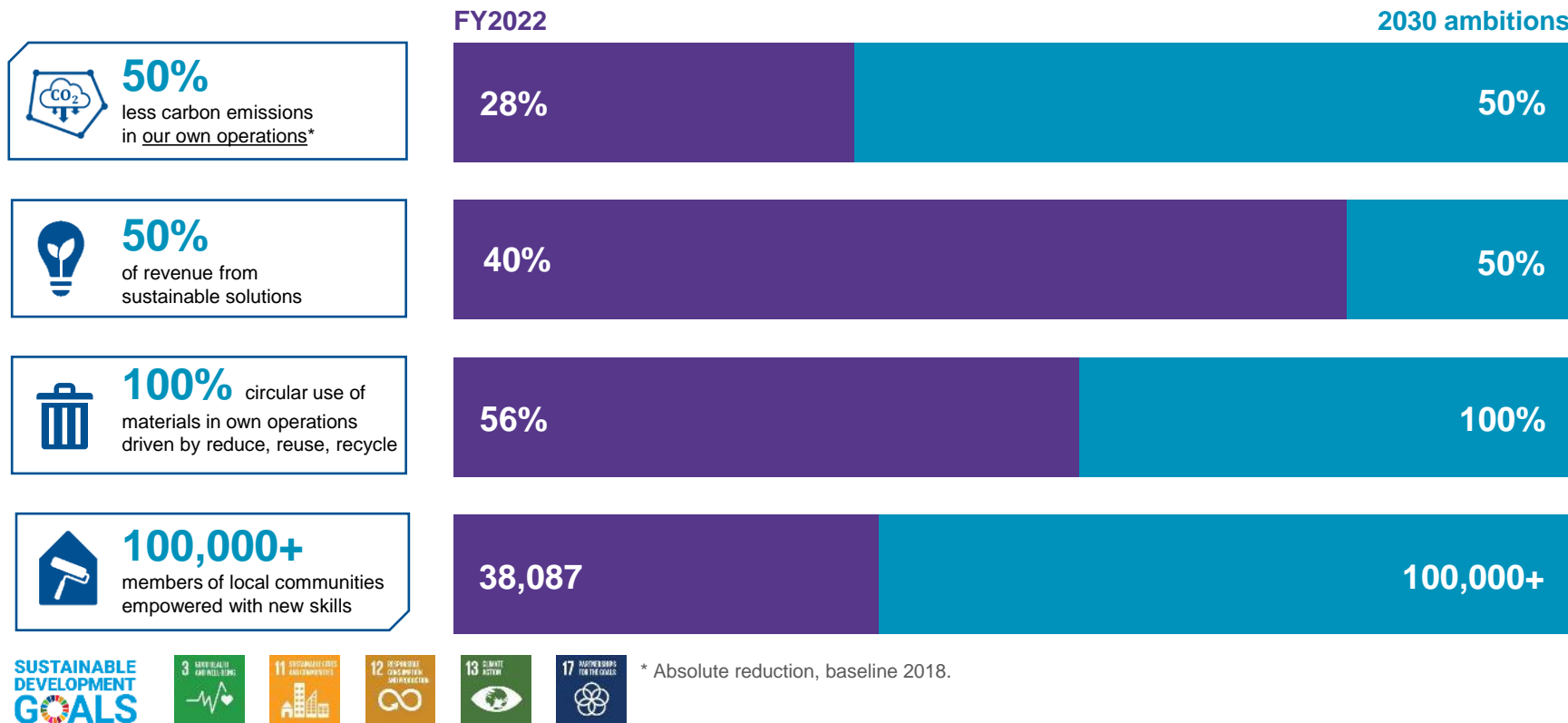
Our products and brands make it possible for us to live up to our People. Planet. Paint. sustainability approach.

They're each making crucial contributions to our sustainability ambitions through all the layers of this pyramid.



*Baseline 2018

Progress towards our ambitions



SEMINAR OBJECTIVES

- **IMPACT OF VISUAL IMPAIRMENT ON NAVIGATION**



- **EQUALITY ACT PART M: COLOUR & CONTRAST**



- **INCLUSIVE DESIGN: USING COLOUR CONTRAST WITHOUT IMPACTING ON AESTHETICS**



Visual Impairment

IMPORTANCE OF SIGHT

70-75% OF INFORMATION IS GATHERED THROUGH VISION



2 MILLION

IN U.K. ARE REGISTERED BLIND



DIFFERENT EYE DISEASES = DIFFERENT TYPES OF RESIDUAL VISION

UNDERSTANDING VISUAL IMPAIRMENT LEADS TO MORE INCLUSIVE DESIGN

GOOD VISION



LOSS OF CENTRAL VISUAL FIELD



LOSS OF PERIPHERAL FIELD VISION



GENERAL/SPORADIC LOSS OF VISUAL FIELD

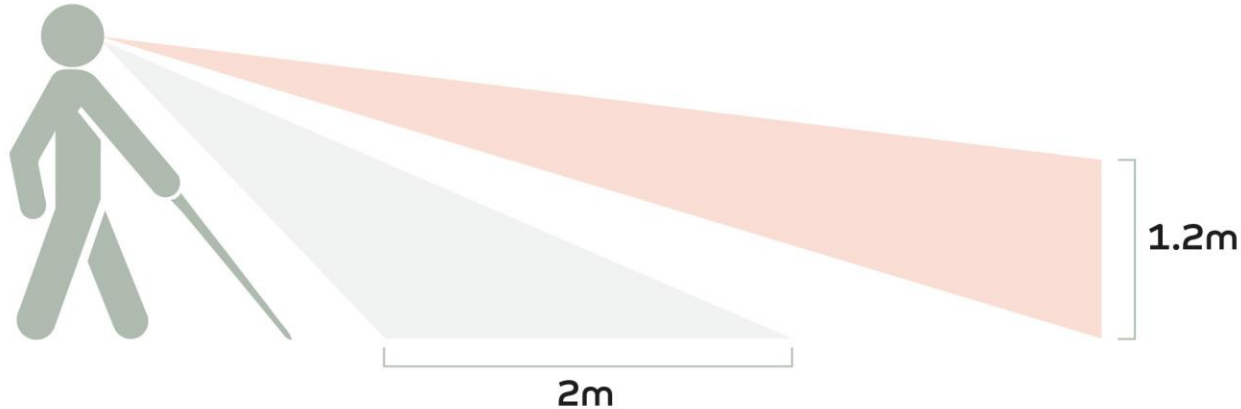


VISUAL CONTRAST AIDS NAVIGATION



People with Visual Impairments Use their Residual Vision to Find their Way Around

Relying on Contrast and Colour Changes to Distinguish Between Surfaces and Objects



COLOUR AND CONTRAST IN DESIGN



**An Obvious Response might be to
Simply Maximise Colour and
Luminance Contrast Between
Surfaces and Fixtures**

Project Rainbow & Using Colour Contrast

PROJECT RAINBOW

PROJECT RAINBOW RESEARCH 1997

ICI PAINTS, RNIB, UNIVERSITY OF READING AND GUIDE DOGS FOR THE BLIND

ESTABLISHED HOW COLOUR CAN:

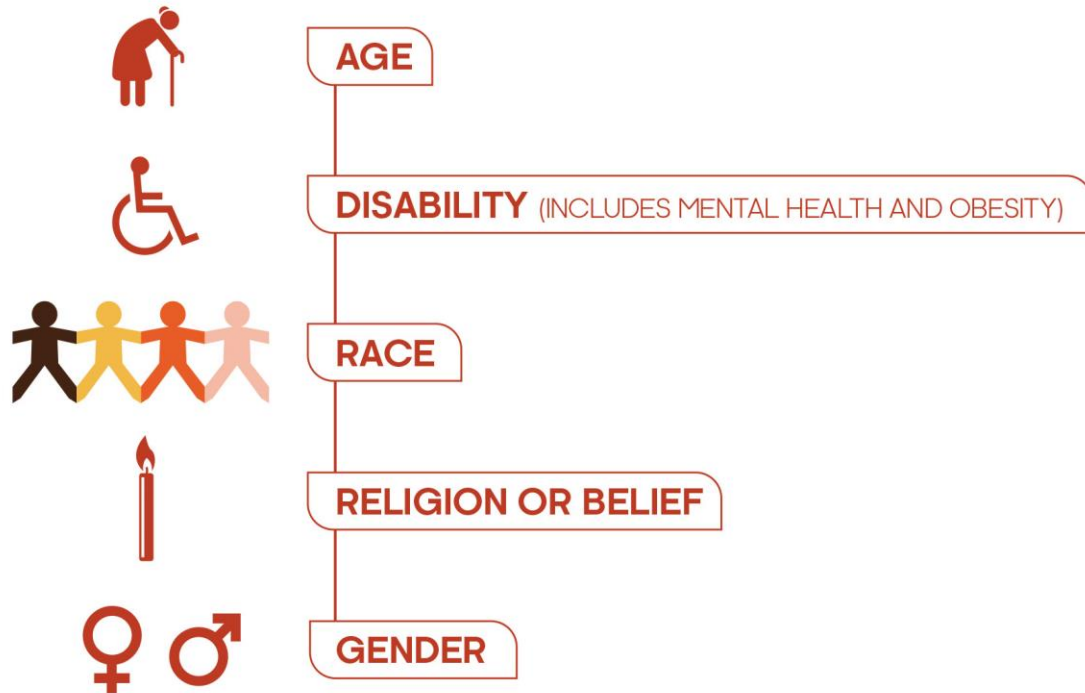
- ENHANCE SPATIAL AWARENESS
- IDENTIFY KEY BUILDING FEATURES
- WITHOUT COMPROMISING ON AESTHETIC APPEAL

KEY CONCLUSION:

- USE OF SUFFICIENTLY DIFFERENTIATED COLOURS ON CRITICAL ADJACENT SURFACES SUPPORTS WAY-FINDING

EQUALITY ACT 2010

The Purpose of the Act is to Streamline and Combine Previous Anti-Discrimination Legislation and Extend the Areas Covered to:



EQUALITY ACT DESIGN GUIDELINES

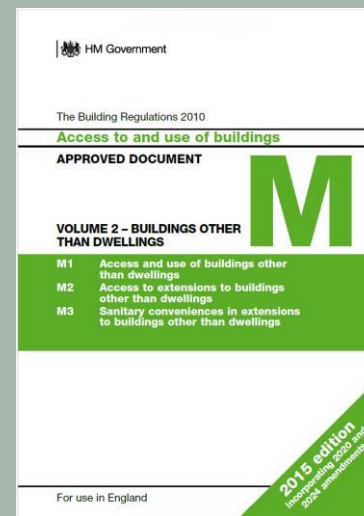
PROJECT RAINBOW LED TO THE DEVELOPMENT OF VISUAL CONTRAST DESIGN GUIDANCE IDENTIFIED IN:

BUILDING REGULATIONS APPROVED DOCUMENT PART M, VOL 2

For New Build and Major Refurbishment Projects
Minimal Visual Contrast of 30 LRV
Between Critical Surfaces is Recommended

BS 8300-2:2018 Design of an accessible and inclusive built environment - Buildings. Code of practice

Best Practice Guidelines for All Buildings
Minimal Visual Contrast of 20 LRV
However 30 is Preferred



CRITICAL SURFACES

MOST IMPORTANT SURFACES FOR UNDERSTANDING INTERIOR LAYOUTS
- NEED TO BE SUFFICIENTLY DIFFERENTIATED FOR EASY IDENTIFICATION



A CEILINGS **B** WALLS **C** DOORS **D** FLOORS

TRIM

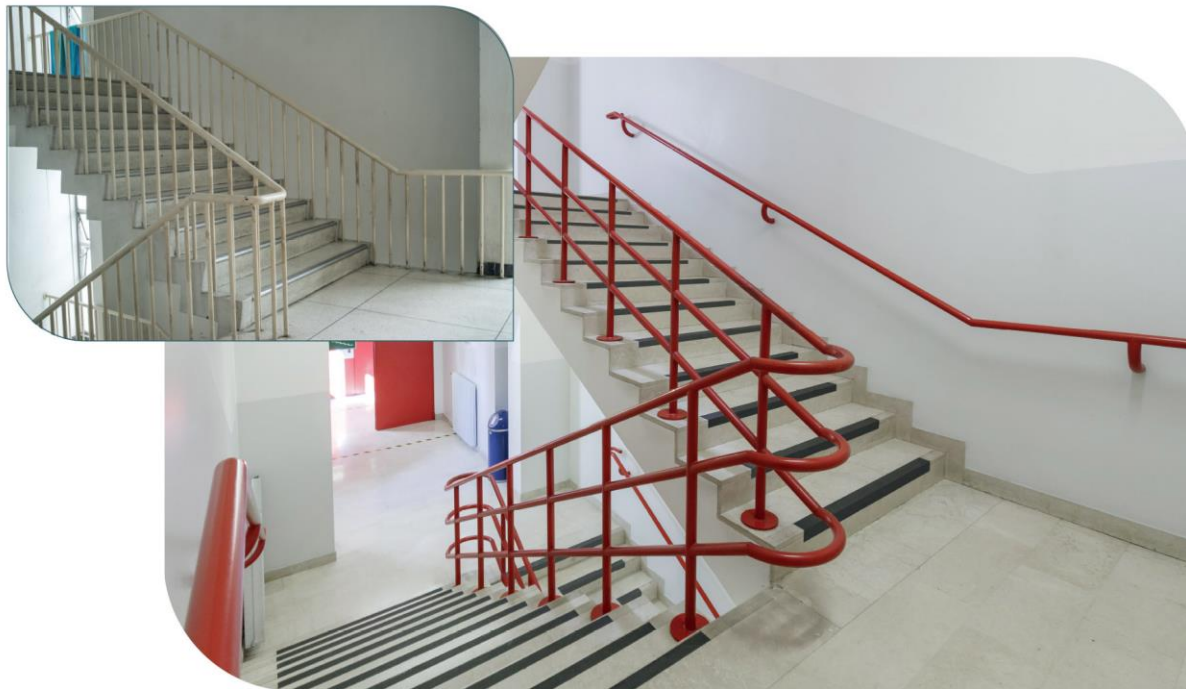


TRIM INCLUDES:

- 1 COVING
- 2 SKIRTING
- 3 ARCHITRAVE
- 4 DADOS

SPECIAL FEATURES HIGHLIGHTED

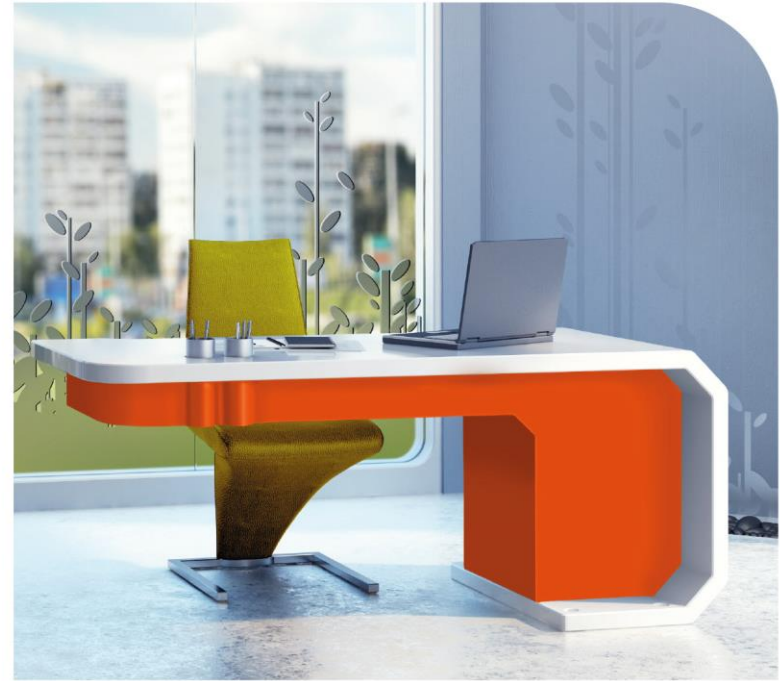
HIGHLIGHTING SPECIAL FEATURES ALLOWS THE BUILDING TO BE USED MORE EFFECTIVELY
BY VISUALLY IMPAIRED PEOPLE



GENERAL OBSTACLES AND FURNITURE



Minimize Obstructions
Differentiate Between Walls and Floors



Strong Contrast Needed for Features that
Extend Beyond Base Supports

BAD PRACTICE



GOOD PRACTICE



LIGHTING



**VISUAL CONTRAST CAN BE REDUCED BY
INEFFECTIVE LIGHTING DESIGN**

Interior Lighting Conditions which Produce Glare and Shadows Create an Environment which can be Uncomfortable for those with Visual Impairments



ILLUMINANCE (LUX)

General Minimum: 100 LUX

NATURAL LIGHTING

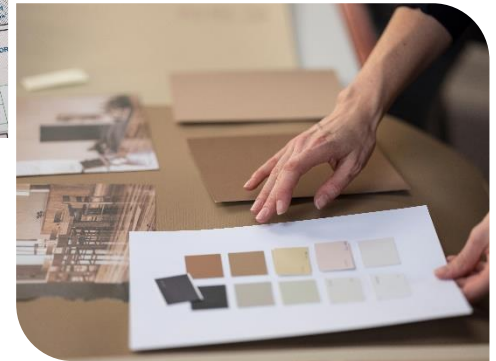


Natural Light is a Good Source of Illumination, but it can Cause Shadows which Make the Environment Difficult for Partially Sighted People to Use Independently

Creating Your Colour Scheme

CREATING YOUR SCHEME

- Colour should be integral to project - don't leave until the end
- Gather lots of information
- Talk about personal needs & preferences with individuals
- Think about texture, finish and colour
- As well as durability and usability

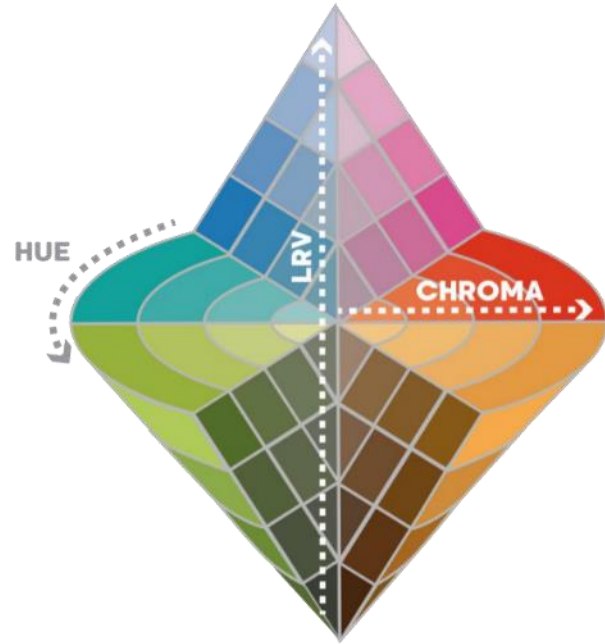


HOW THE EYE PERCEIVES COLOUR

COLOUR, AS PERCIEVED BY THE AVERAGE EYE, IS TRI-DIMENSIONAL:

- Hue
- Light Reflectance Value (LRV*)
- Chroma

*LRV Difference Defines Visual Contrast as Referenced in the Equality Act Guidelines and in BS 8300-2:2018



THERE ARE MANY COLOUR NOTATION SYSTEMS USED GLOBALLY

The Role of the Notation System is to
Give Each Colour a Clear, Unique
Identity and to Aid Colour Scheming

A Good Notation System will Reflect
How the Eyes See Colour



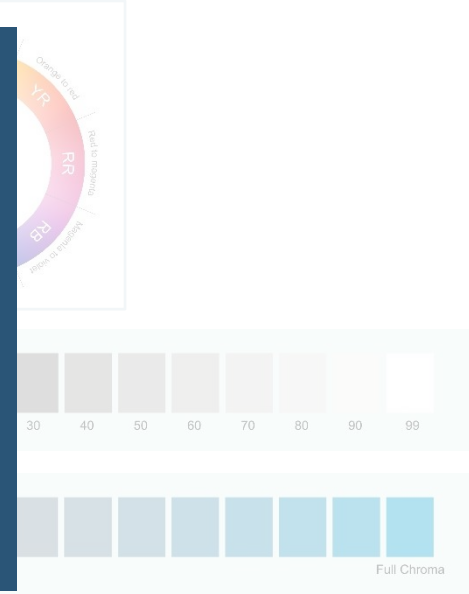
EXAMPLE OF A NOTATION SYSTEM

COLOUR PALETTE NOTATION REFLECTS THE THREE DIMENSIONS OF COLOUR:

HUE – THE COLOUR FAMILY

LIGHT REFLECTANCE VALUE (LRV) –
LIGHTNESS OR DARKNESS OF COLOUR

CHROMA – INTENSITY OR PURITY OF COLOUR
LOWER CHROMA = MORE NEUTRAL
HIGHER CHROMA = MORE INTENSE COLOUR

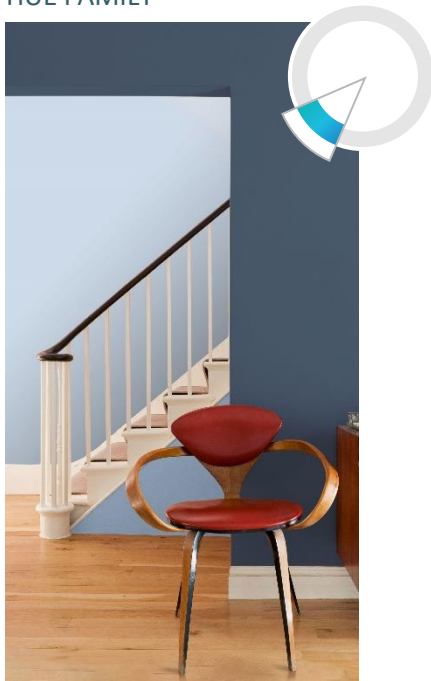


EXAMPLE NO **30BB** **08** / **263** } / **263**
HUE LRV CHROMA CHROMA

SELECTING COLOURS: THREE SIMPLE SCHEME TYPES:

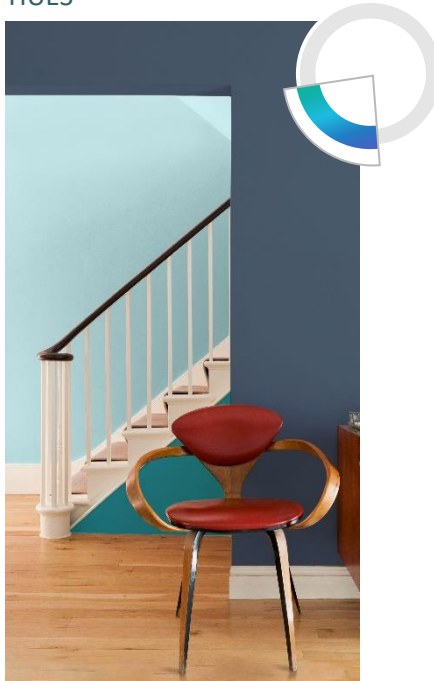
TONAL SCHEMES:

DIFFERENT DEPTHS OF THE SAME
HUE FAMILY



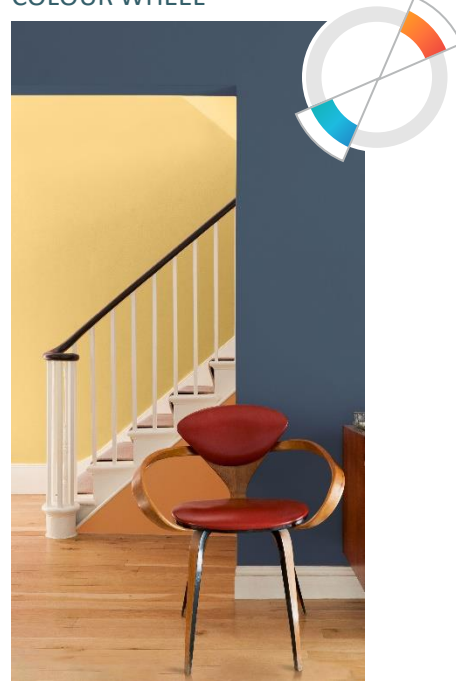
HARMONISING SCHEMES:

COLOURS FROM NEIGHBOURING
HUES



CONTRASTING SCHEMES:

COLOURS OPPOSITE ON THE
COLOUR WHEEL



COLOUR PROPORTION & FLOW

- **CONSIDER THE PROPORTIONS OF COLOUR**



Summary

SUMMARY

- VISUAL IMPAIRMENTS AND NAVIGATING WITH RESIDUAL VISION
- IMPORTANCE OF VISUAL CONTRAST AND CRITICAL SURFACES
- LIGHTING CONSIDERATIONS
- EQUALITY ACT GUIDELINES
- INCLUSIVE DESIGN: PRACTICAL & AESTHETIC

QUESTIONS?



RIBA 皇家建筑师学会 | AkzoNobel

FURTHER INFORMATION

- THE EQUALITY ACT 2010
- BUILDING REGULATIONS **APPROVED DOCUMENT PART M Vol 2 2015**
- BRITISH STANDARD BS 8300-2:2018 DESIGN OF AN ACCESSIBLE AND INCLUSIVE BUILT ENVIRONMENT. BUILDINGS. CODE OF PRACTICE
- ROYAL NATIONAL INSTITUTE OF BLIND PEOPLE: FURTHER TRAINING COURSES ON VISUAL IMPAIRMENT AND ACCESSIBILITY ARE AVAILABLE FROM **RNIB**
- NATIONAL REGISTER OF ACCESS CONSULTANTS: **www.nrac.org.uk**
- DULUX TRADE COLOUR AND CONTRAST DESIGN GUIDE – INTERACTIVE PROGRAMME
<http://content.duluxtradepaintexpert.co.uk/web/ColourContrast/index.html>
- THE ACCESS MANUAL: DESIGNING, AUDITING AND MANAGING INCLUSIVE BUILT ENVIRONMENTS
Paperback – July 2014; A Sayer, K Bright
- Colour, Contrast and Perception. Design Guidance for Internal Built Environments, 2004: University of Reading
- CONTACT THE **DULUX TRADE TECHNICAL ADVICE TEAM ON: 0333 222 770**