

The Psychoacoustic Approach

An alternative approach to resolving office noise

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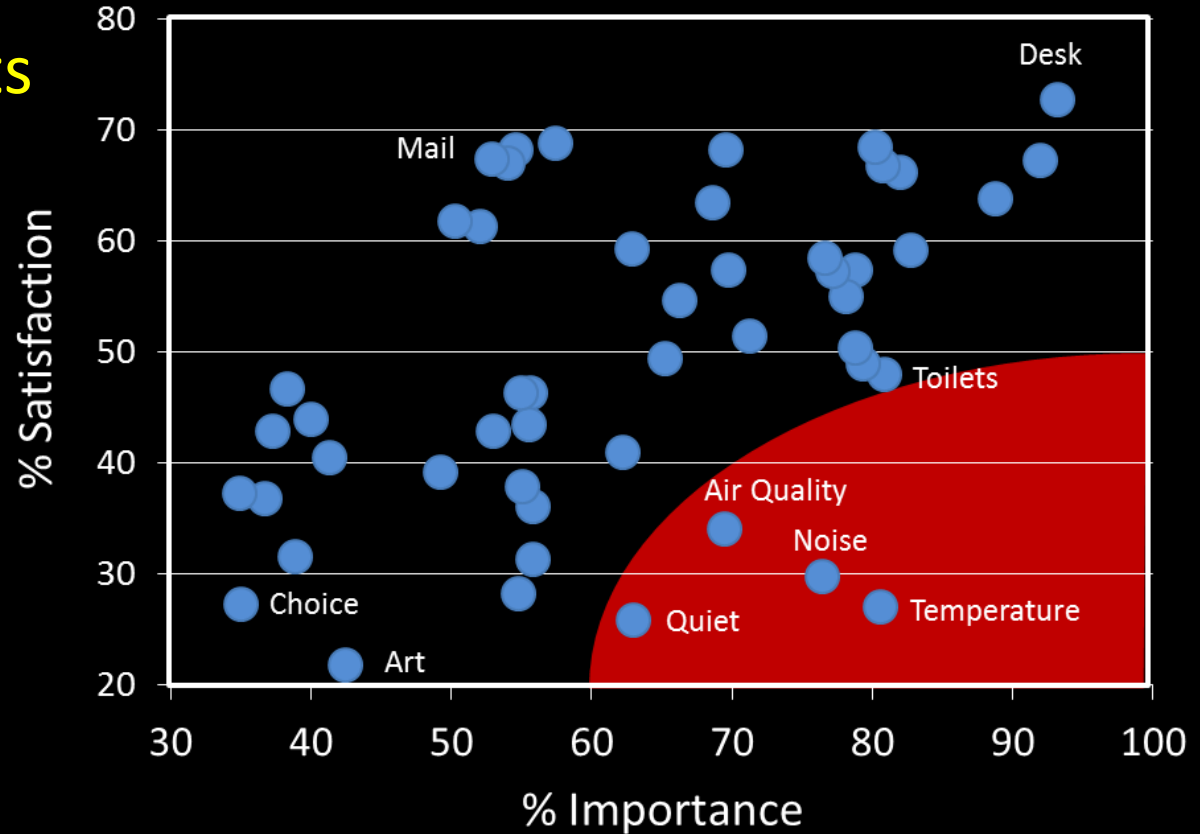
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Office noise also major problem

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“53% of respondents say the workplace enables them to work productively”



Leesman (2016) 100,000+ Data Report

ANC Conference, © Oseland 2016

What is noise?

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“Noise is *unwanted* sound”

Sound level = 25% noise



Context & attitude

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What is psychoacoustics?

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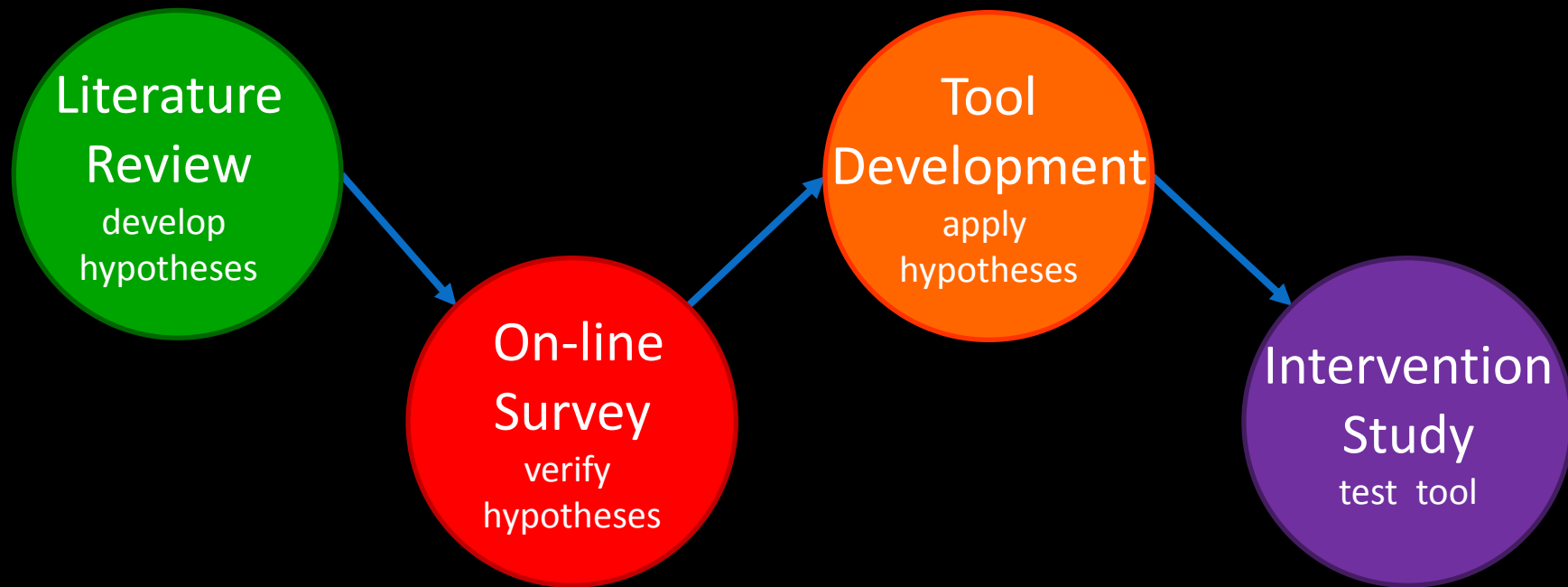
“Psychoacoustics is the scientific study of the psychological and physiological responses associated with sound”

Study of how people perceive, interpret and react to sound



Evidence based approach

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>150 research papers
>500 survey responses

Rating scales

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Performance (%)

Productivity

Ability to work

Concentration

Distraction

Speech interference

Stress

Wellbeing

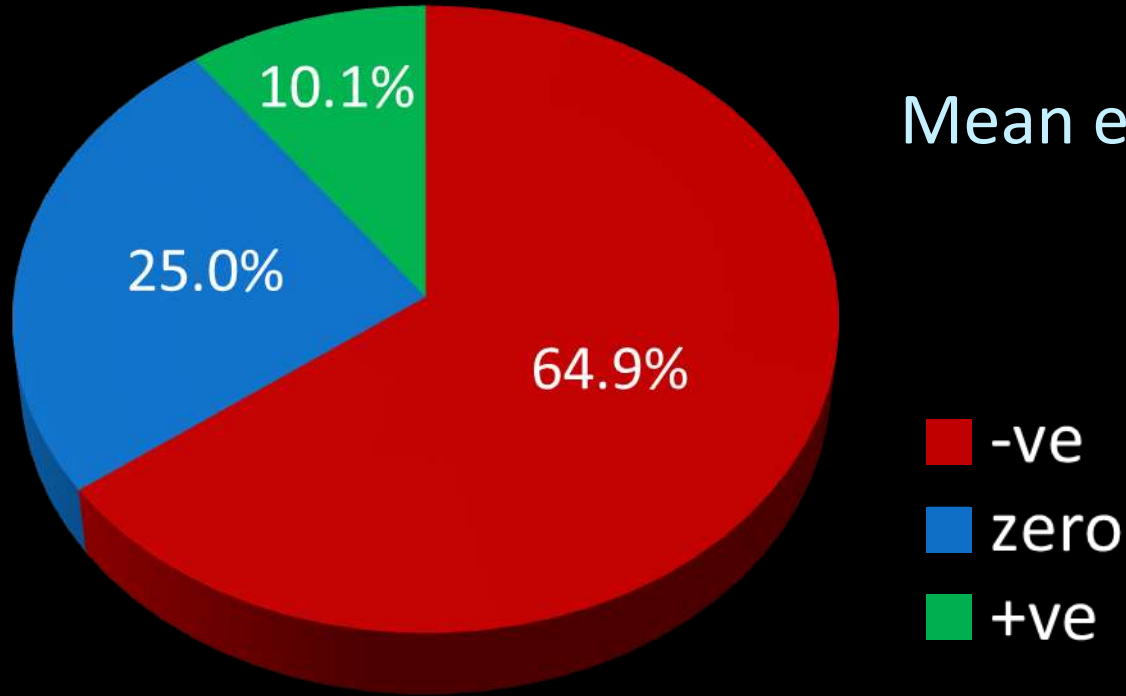
+ Personality + Activity

+ Place + Design ...



Noise does affect productivity

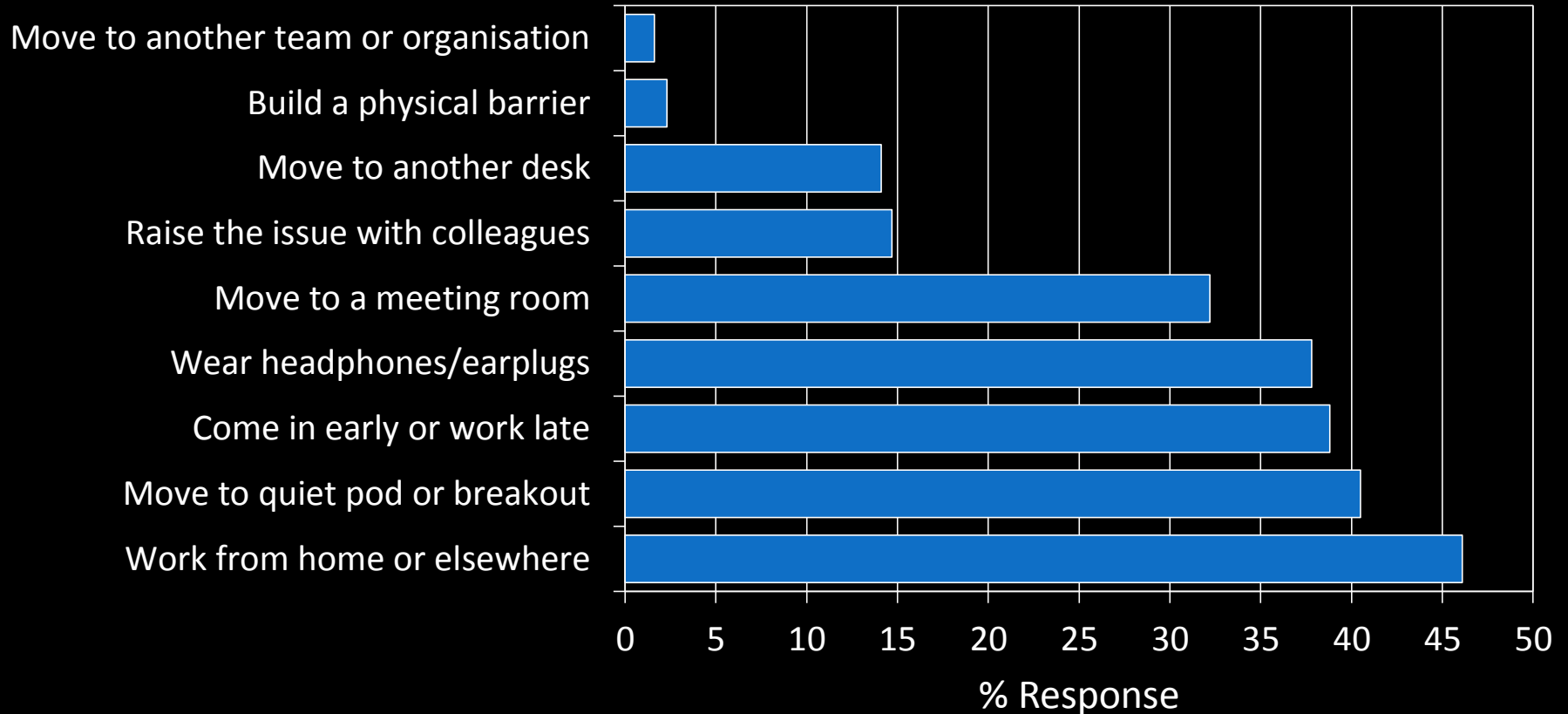
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Mean effect of noise = -5.1%

Coping mechanisms

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Factors affecting noise impact

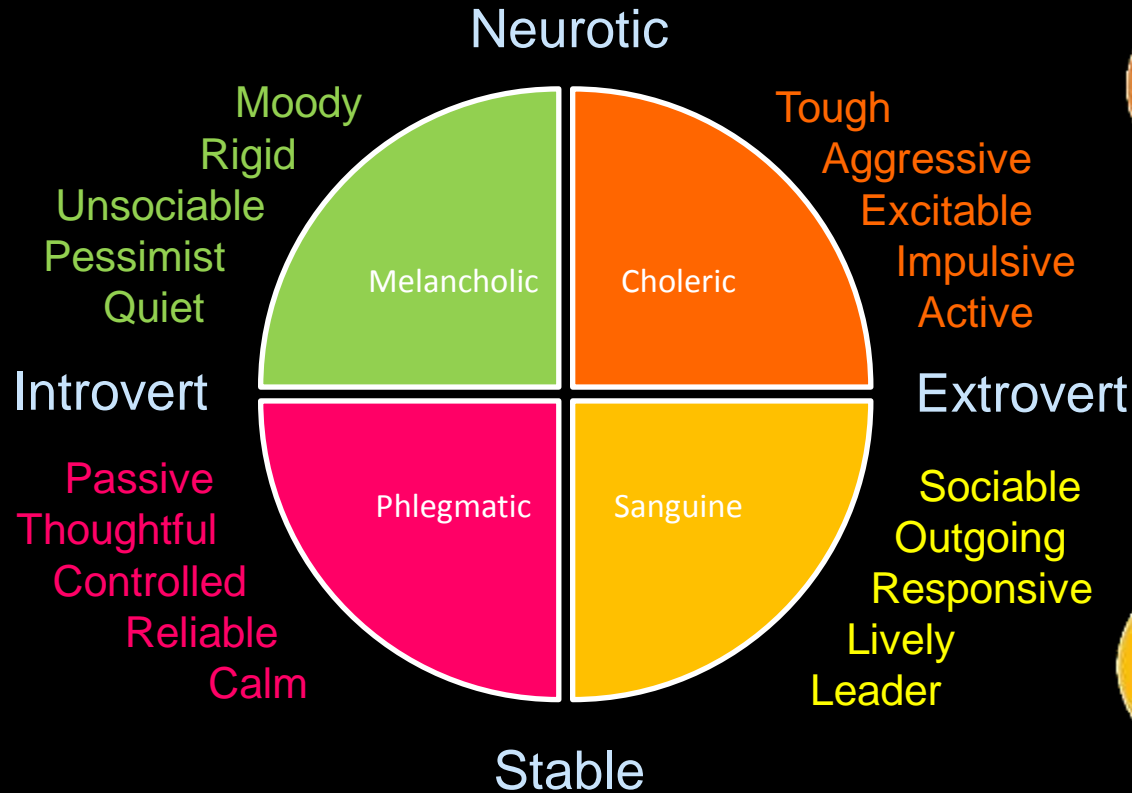
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- Personality type
- Work activity
- Place of work
- Perceived control
- Design features
- Individual factors



Personality types

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Personality & performance

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Introvert v Extrovert

- ✓ Performance
- ✓ Productivity
- ✓ Concentration
- ✗ Distraction
- ✗ Speech
- ✗ Stress
- ✓ Wellbeing

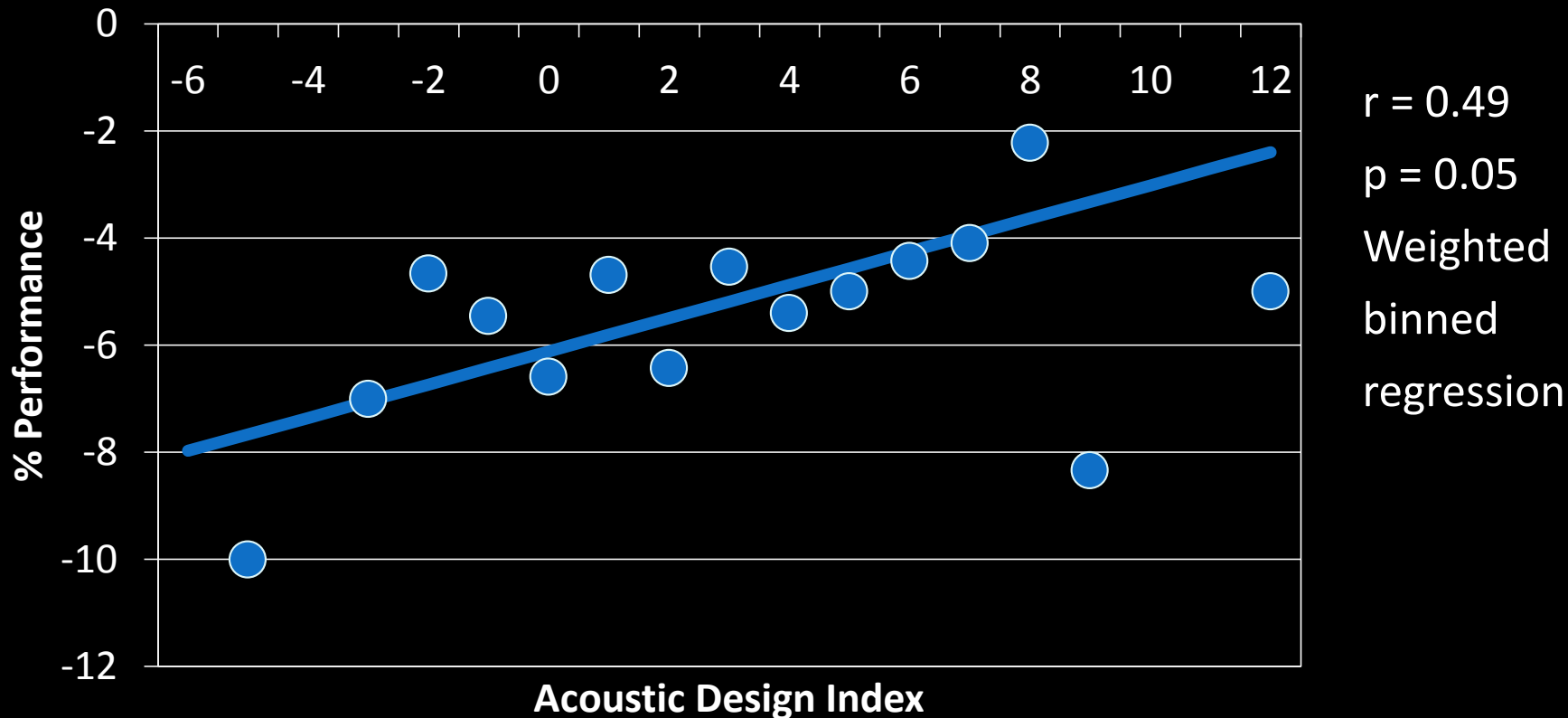


Neurotic v stable

- ✗ Performance
- ✓ Productivity
- ✓ Concentration
- ✗ Distraction
- ✓ Speech
- ✓ Stress
- ✓ Wellbeing

Acoustic design index (ADI)

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Key contributing variables

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Noise perception	Factor Analysis entered variables	Variance
Performance (%)	Screening ability, Design	13%
Productivity	Screening ability, Design, Openness	27%
Ability to work	Screening ability, Design, Openness	25%
Wellbeing	Screening ability, Design, Openness	17%
Stress	Screening ability, Design, Openness	25%
Concentration	Screening ability, Design, Openness	40%
Distraction	Screening ability, Control, Home-working	41%
Interruption	Screening ability, Control, Heads-down	26%

25% sound level +
41% psychological
= 66%

People-centred guidance

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Displace

Avoid

Reduce

Educate



Solution process

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Evaluation

Acoustic/Physical
Environment

Roles &
Work Activity

Personality
Profiles

Individual &
Team Factors

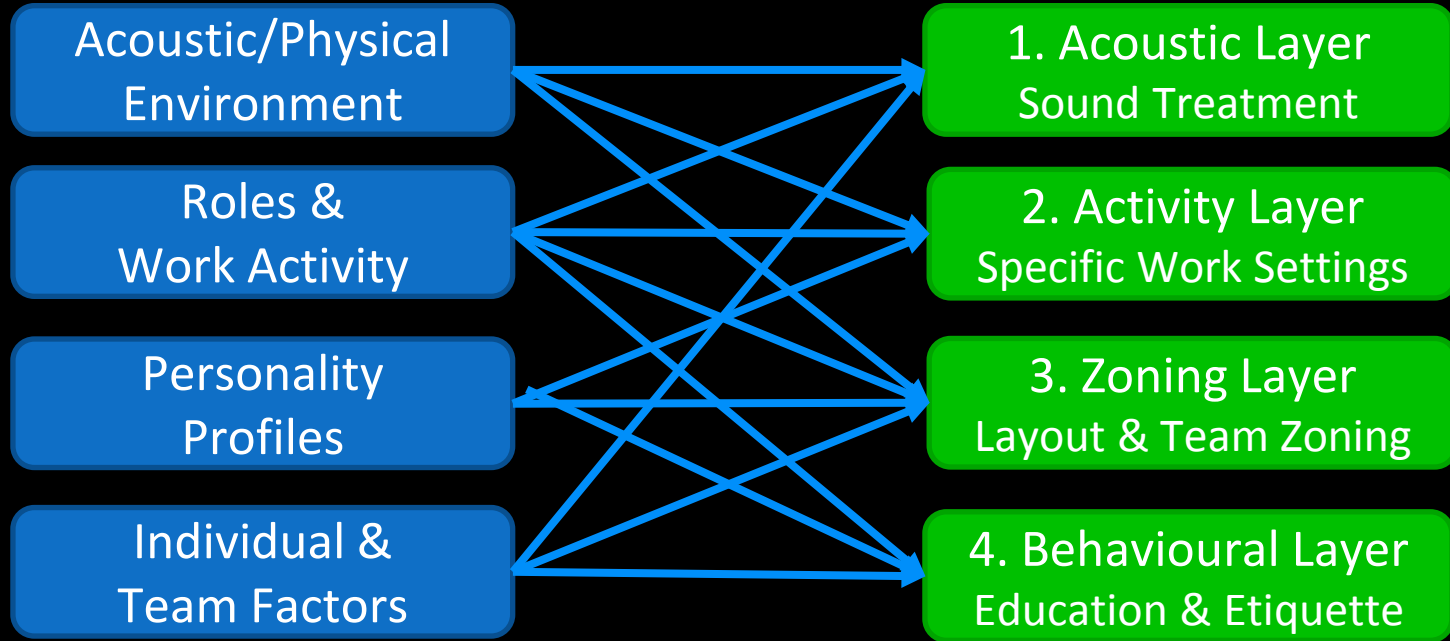
Solutions

1. Acoustic Layer
Sound Treatment

2. Activity Layer
Specific Work Settings

3. Zoning Layer
Layout & Team Zoning

4. Behavioural Layer
Education & Etiquette



Survey & tool

Personality Profiling

	A	B	C	D	E
1	PSYCHOLOGICAL QUESTIONS				Ecophon Psychoacoustic Tool
2	Business:	Name	Click and select brown text		
3	1. Personality Traits	Question	Answer	Recommendation	
4	1a. Extroversion	What percentage of your staff are introverts ?	>66%	Extroverts prefer stimulating and busy environments. However, they will also require spaces for carrying out occasional focussed work or for confidential calls and meetings.	
5	1b. Conscientious	What percentage of your staff are highly conscientious ?	33-66%	Provide a mix of different spaces to allow the conscientious to focus and work at their desk and the less conscientious to work in alternative settings.	
6	1c. Openness	What percentage of your staff are open to new experiences?	<33%	Those less open to new experiences, i.e. traditional or conventional, will prefer a quieter workspace designed for heads-down work free from distraction.	
7					
8	2. Work Activities	Question	Answer	Recommendation	
9	2a. Complex tasks	What percentage of your staff spend the majority of their time working on complex tasks requiring concentration?	>66%	If the majority carryout complex task that require focus and concentration make the main work space free from noise distraction; also allow home working and provide alternative work settings for noisy activities.	
10	2b. F2F interaction	What percentage of your staff spend the majority of their time interacting with their clients and colleagues ?	Don't Know	The type of task that employees carry out affects their workspace requirements; understand the key tasks and design spaces for complex work requiring focus as well as spaces for interaction.	
11	2c. Phone calls	What percentage of your staff spend the majority of their time making phone calls or in teleconference?	Select		
12					
13	3. Personal Factors	Question	Answer	Recommendation	
14	3a. Age	What percentage of your staff are middle aged or older?	Select		
15	3b. Screening ability	What percentage of your staff are able to readily screen out noise and distractions?	Select		

Acoustic design before

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Acoustic design after

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Acoustic design before

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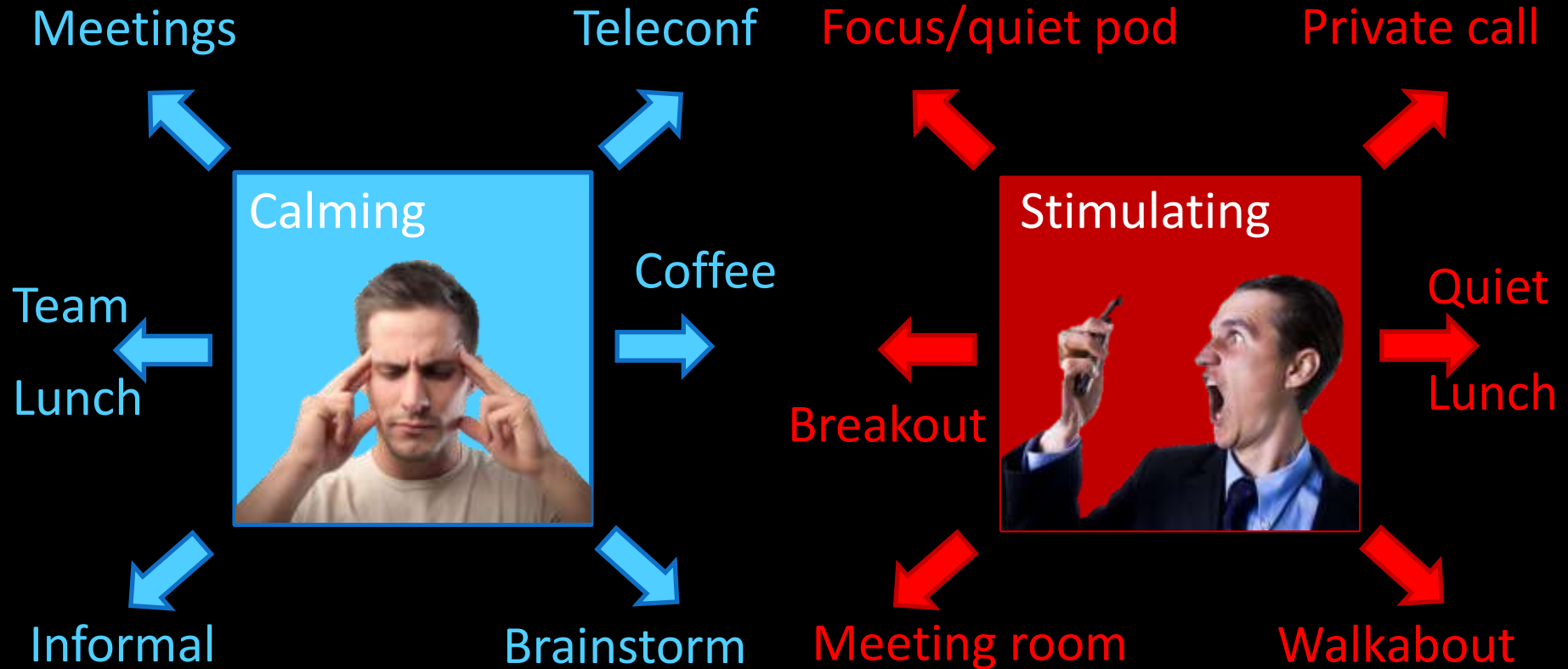
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Zoning – task & personality

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Behavioural

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Choice of settings

Perceived control

Acoustic etiquette

Variable work hours

Do not disturb signals

Visual design cues



Free resources

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Oseland & Hodsman (2015) *Planning for Psychoacoustics: A Psychological Approach to Resolving Office Noise Distraction*. Workplace Unlimited.

Oseland (2015) *Psychoacoustics Survey Results: Psychological Factors Affecting Noise Distraction*. Workplace Unlimited.

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