Community Fact Sheet

Noise and Sound Pollution

How Noise and Sound Impact Human Health

- By definition: **Noise** is unwanted or disturbing sound[1]
- Once noise becomes persistent and increasing in levels (over **70 decibels**), severe health consequences can develop.
- These can include: hearing loss, sleep disturbance, stress, mental health, cognitive impairment[1]

NOISE LEVEL DECIBEL CHART

Sound Level		Sound Level Per Activity
High Risk Hearing damage	**+**	
High Noise Level Wear hearing protection mandatory in the workplace	**150**	Jet Plane, Explosion
	130	Formula 1
Risk Hearing damage	**120**	Airplane Taking Off, Jachammer — PAIN THRESHOLD!
Average Sound Level Wear wearing protection mandatory in the workplace	**110**	Ambulance, Concert
	100	Lawn Mower, Circular Saw, Wind Noise
	85	Drilling, Sanding Radio Loud
	80	Busy Traffic, Dog Barking
No Risk Hearing damage	**70**	Office Sounds, Listening To Music
	60	Conversation
	30	Recording Studio
	0-5	Silence (not Realistic)

Maximum daily dose without hearing protection
- 107 dB = 1 minute
- 95 dB = 15 minute
- 80 dB = 8 minute

Electronics **Hub**

Decibals (dB)

- Noise becomes harmful when it exceeds 70 dB and can be painful above 120 dB[9]

Sleep Disturbance

- According to Iberdrola (renewable energy company), restful sleep is impossible with nighttime ambient noise levels in excess of 30 dB[9]

Hearing Loss

- One major factor in developing hearing loss is having constant exposure to hazardous noise that's typically above 70 dB[2]
- Research states that over 12 million people in the U.S live near areas of outdoor noise that exceed the threshold of 70 dB continuously[2]

Mental Health

- Individuals exposed to long periods of noise are more likely to respond in anger, irritation, and/or emotional stress[2]
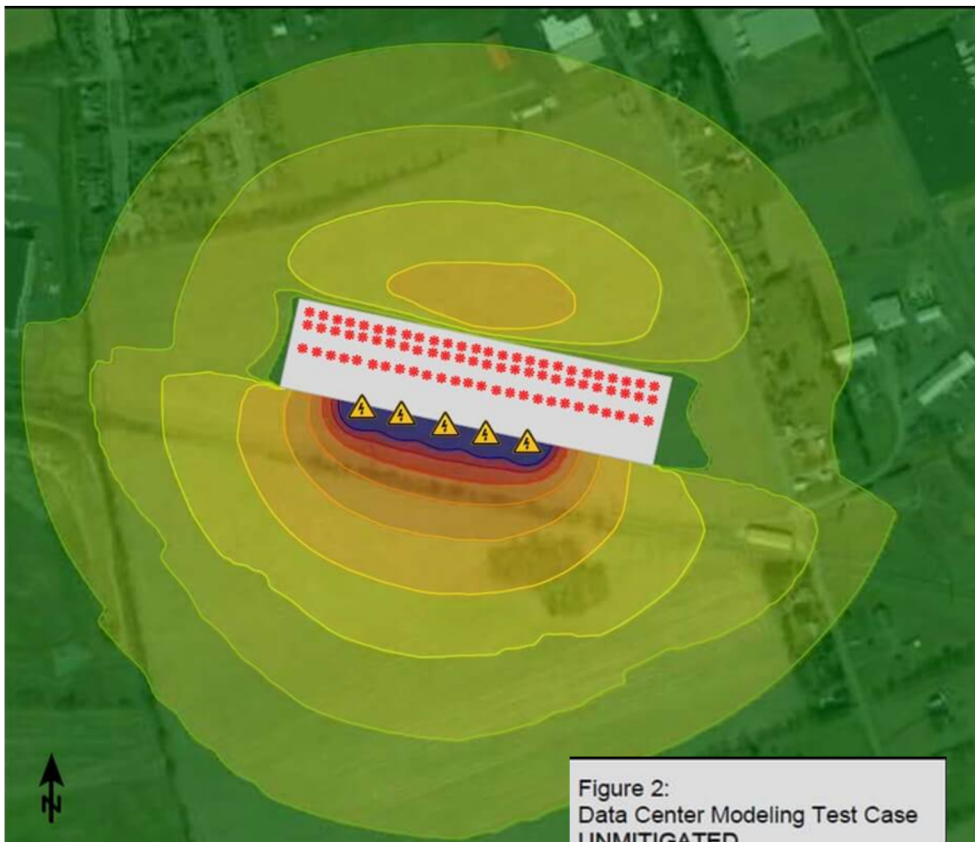- Over time, the listed symptoms (above) can contribute to mental fatigue and impact work performance[2]
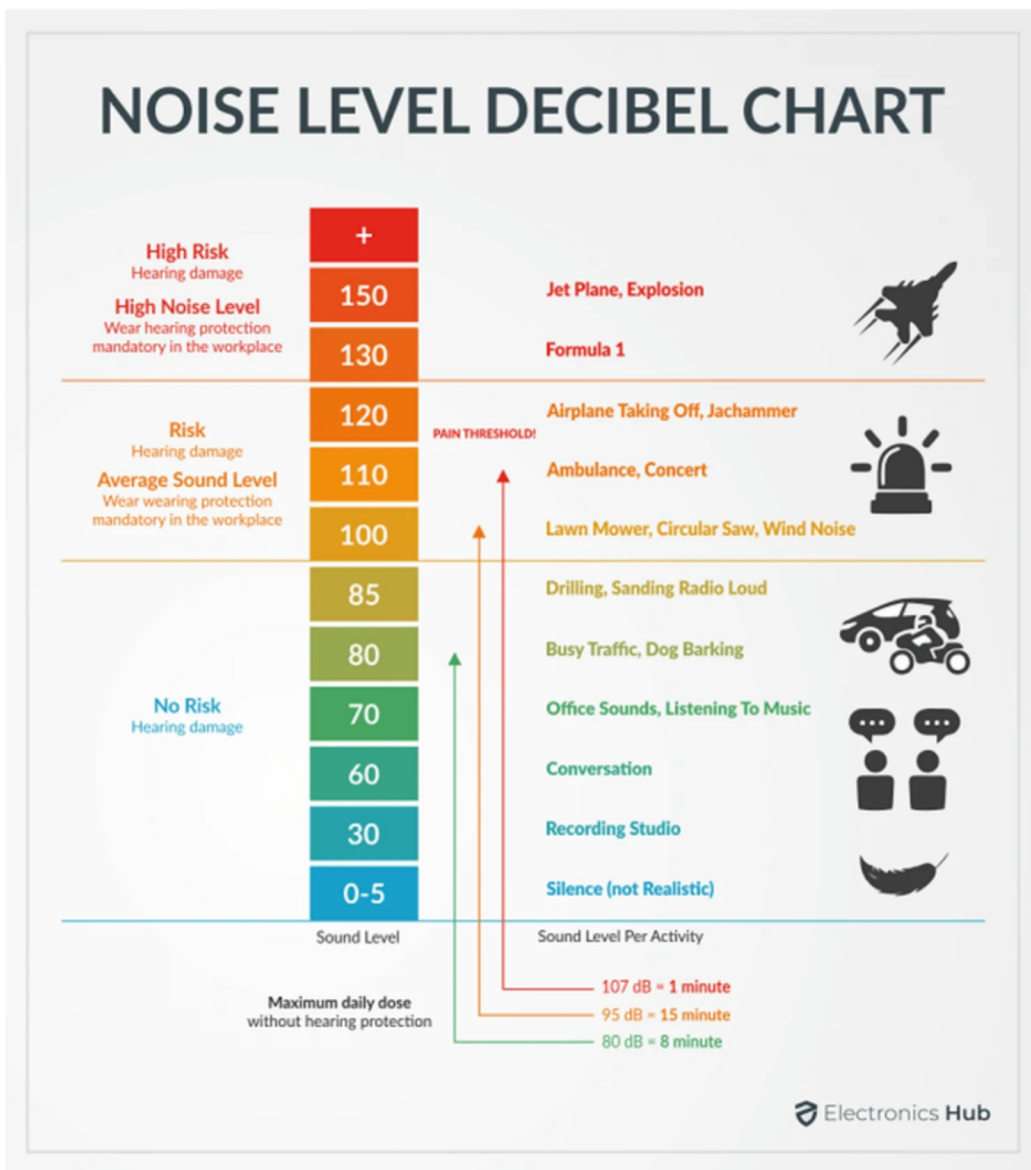
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Signs and symbols

▬	Wall
✳	Roof Mounted Fan
⚠	Generator

Levels in dB(A)

	< 50.0
	50.0 - 52.5
	52.5 - 55.0
	55.0 - 57.5
	57.5 - 60.0
	60.0 - 62.5
	62.5 - 65.0
	65.0 - 67.5
	67.5 - 70.0
	>= 70.0
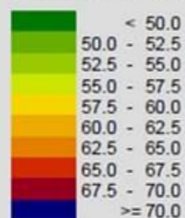
1 : 420

0 75 150   300   450   600 feet

Figure 2:
Data Center Modeling Test Case
UNMITIGATED
Noise Contour Map

Sound Sources:
Data Fans: 97.7 dB(A) SWL
Electric Cooling Fans: 70.3 dB(A) SWL
Generators: 105 dB(A) SWL

Noise Wall Specs: SonaGuard
NRC 1.05
STC: 35+
Parapet Wall: 10 Feet Tall
Generator Enclosure wall: 24-30 Feet Tall

References

1. "Clean Air Act Title IV - Noise Pollution." EPA, Environmental Protection Agency.
2. "Noise Effects Handbook." NPC Library: Noise Effects Handbook,
3. "What Is a Data Center - Types of Data Centers." Cisco.
4. Richardson, Kelly. "Understanding the Impact of Data Center Noise Pollution: TechTarget."
5. "18 Must-Know Data Center Statistics for 2025." TechJury.
6. "Data Center Noise Control Solutions." Sound Fighter Systems.
7. "What Are the 5 Main Causes of Noise in Data Centers?" What Are the 5 Main Causes of Noise in Data Centers?, SCM Demo.
8. Javadi, Anis, et al. "The Effect of Low Frequency Noises Exposure on the Precision of Human at the Mathematical Tasks."
9. "La Contaminación Acústica, ¿Cómo Reducir El Impacto de Una Amenaza Invisible?" Iberdrola, Iberdrola.

Noise and Sound Pollution from Data Centers

- According to Cisco, data centers are a physical facility that organizations use to house their critical applications and data[3]
- As of 2025, the U.S. holds 45% of the total number of data centers globally, with 5,388 data centers[5]
- With many data centers being in the U.S, they most commonly have 3 components (generators, cooling systems, and energy) to be operational[4]
- All 3 components contribute to data centers' high continuous noise levels (55-80 dB)[4]
- Noise pollution from data centers can impact wildlife by disrupting animal communication and forcing them to seek new migration patterns[4]