STERIL-AIRE®

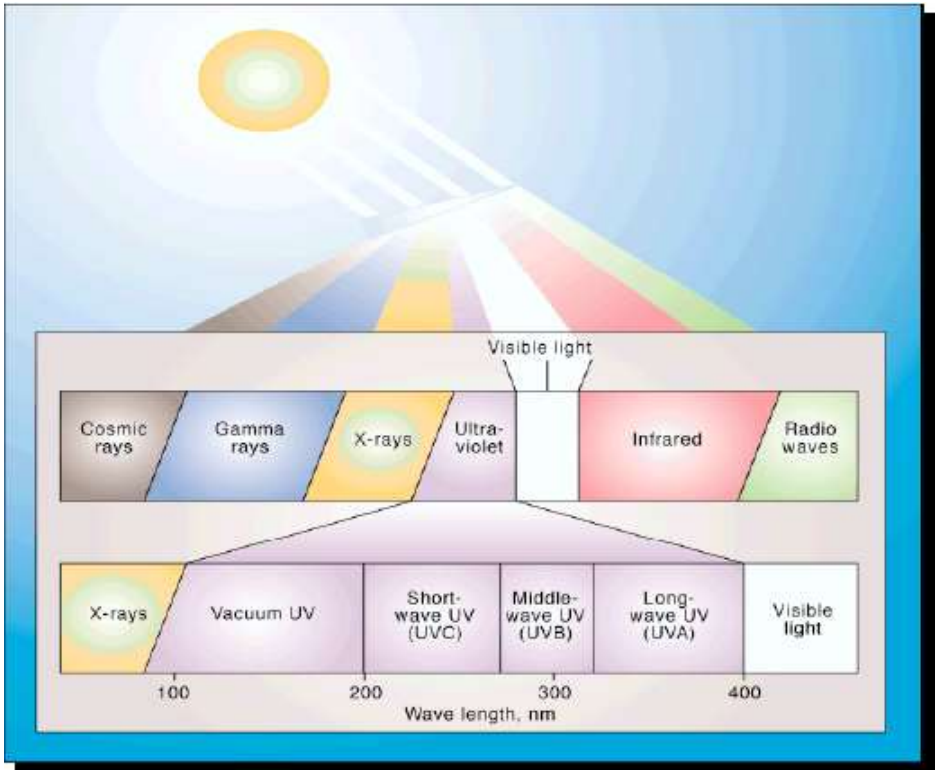
UV C

VIDEO – Importance of UV C

The below link will play a video to demonstrate the **importance** of using UV C technology

https://youtu.be/CYiwHEJ8eyg

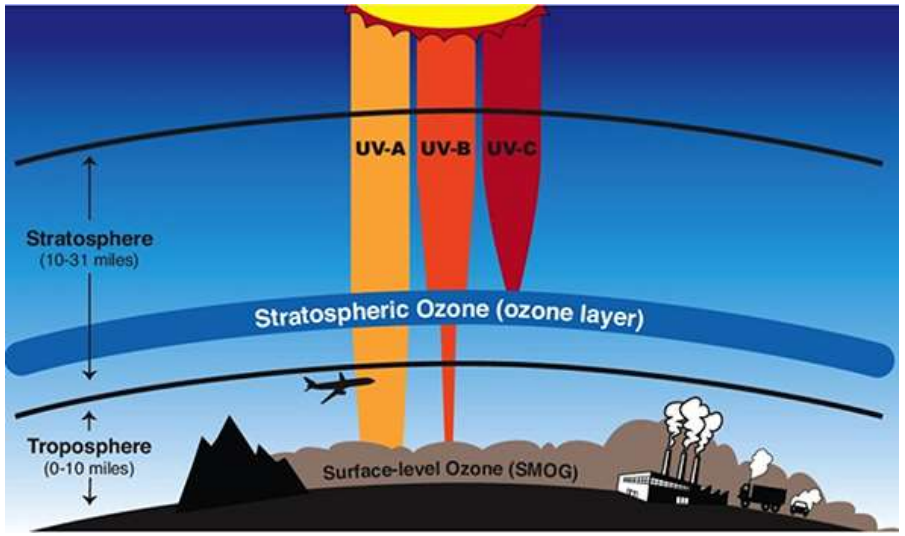
What is UV – Ultraviolet light



Sun produces a spectrum of electromagnetic energy – cosmic rays to radio waves

UV Region :
UV –A : 315 nm to 400 nm
UV –B : 280 nm to 315 nm

UV –C : 200 nm to 280 nm



95% of UV A light
5% of UV B light

0% of UV C light

reaches Earth

(hence effect of UV C unknown to microbes)

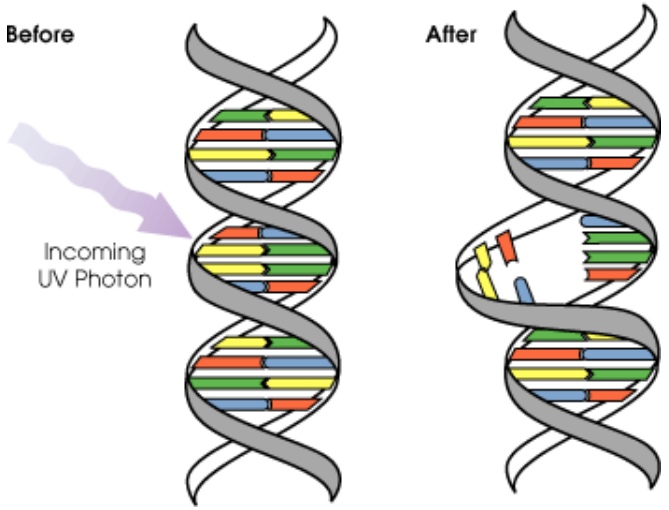
What is UV –C

Electromagnetic radiation having wavelength between 200 nm – 280 nm

UV Light less than 290 nm have germicidal property i.e it can prevent growth of disease causing micro organisms. (**Maximum effect @ 254 nm**)

How does it destroy bacteria, viruses, mold etc

UVC light destroys the **DNA & RNA** of the pathogens preventing them from performing vital cell functions, hence cannot multiply and cause diseases.



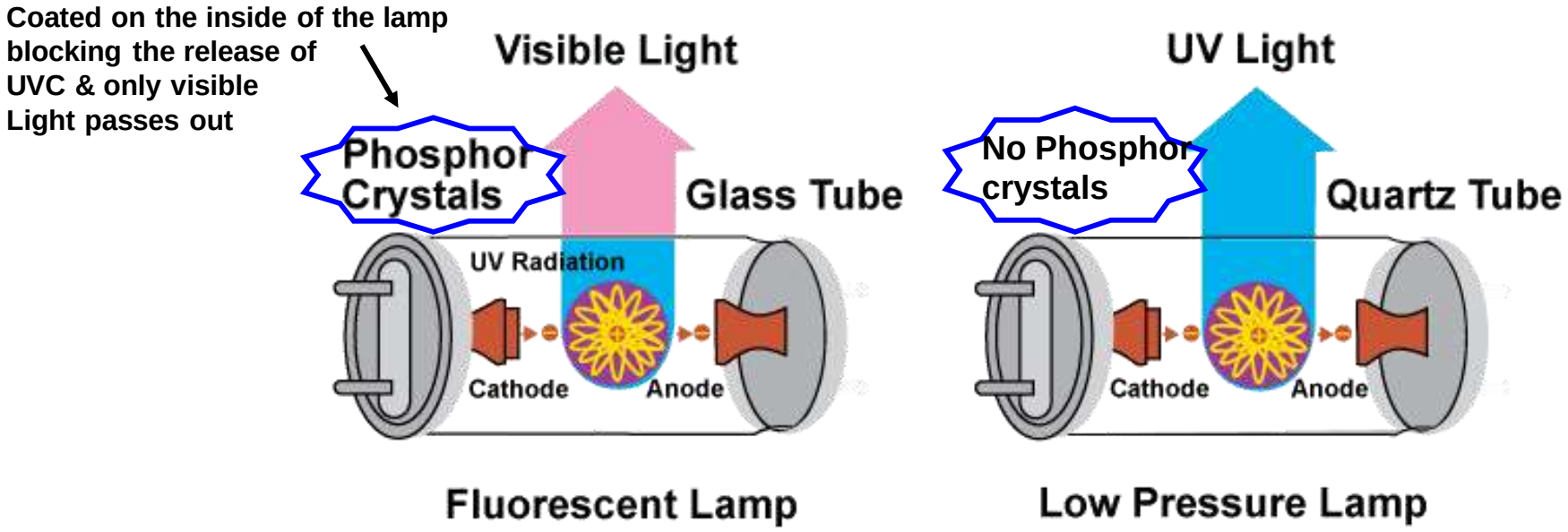
A cell that cannot reproduce is considered dead; since it is unable to multiply to infectious numbers within a host

DNA is a molecule carrying genetic instructions for the development, functioning, growth and reproduction of all known organisms and many viruses.

RNA , are one of the four major types of macromolecules that are essential for all known forms of life.

UV-C & Fluorescent Lamps - Difference

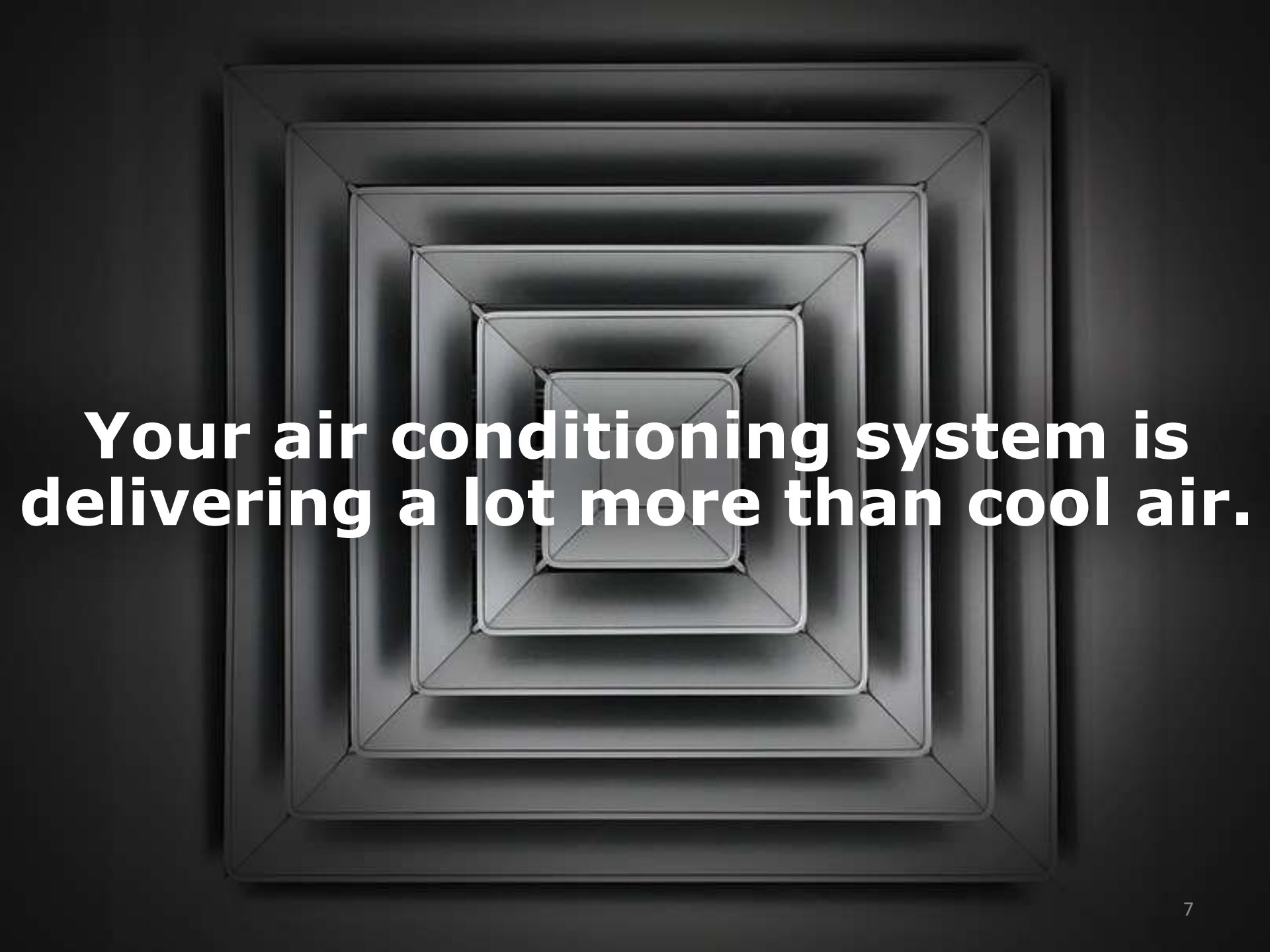
UV C lamp is made of quartz instead of glass. Inside, there is an inert gas (argon) mixed with mercury. When the lamp is plugged in, electricity reacts with the mercury, and the lamp produces UV light

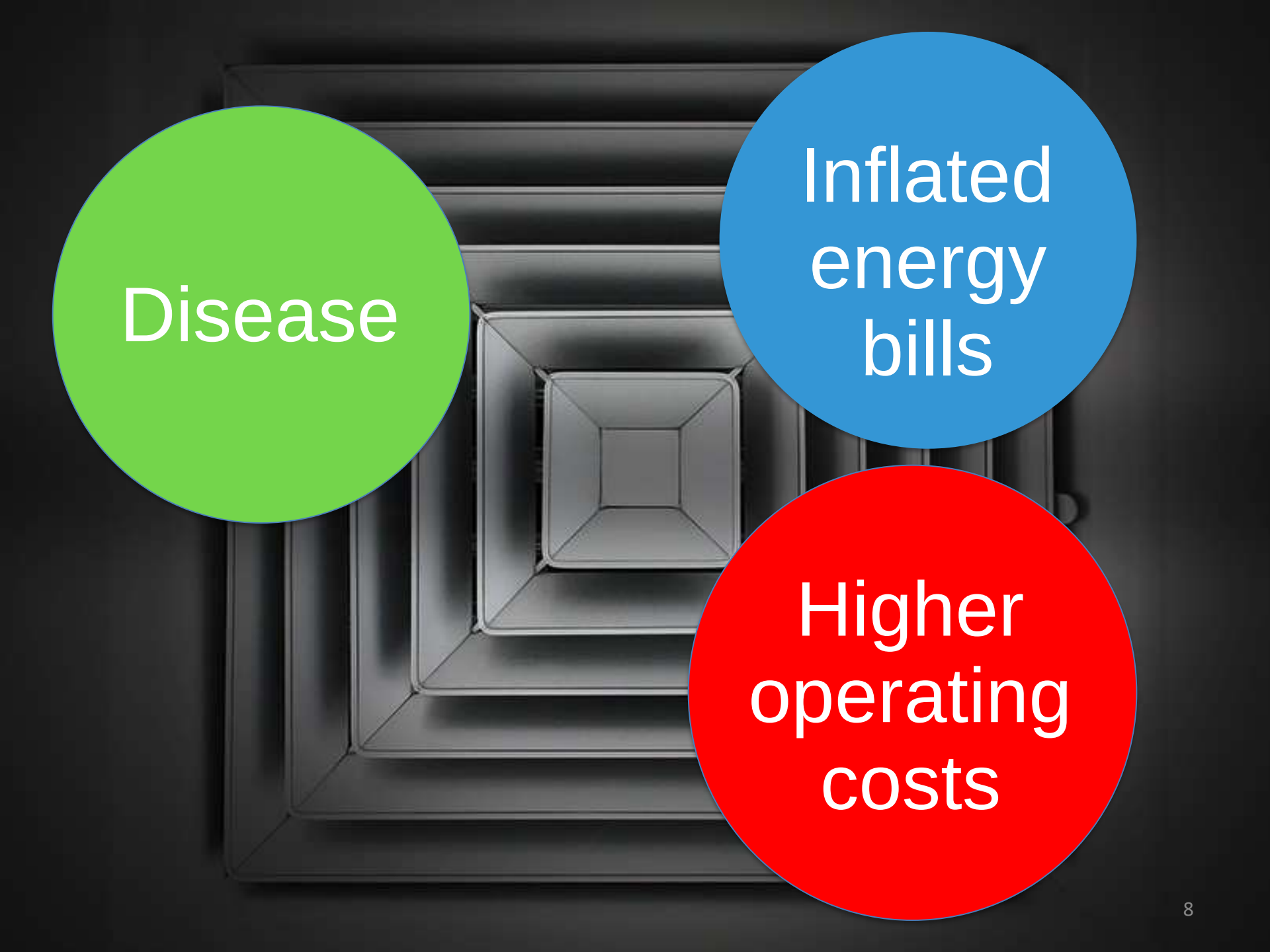


Quartz allows the 185nm and/or 253.7 nm ultraviolet light produced by the mercury arc to pass out of the lamp unmodified.

UV-C is blocked by number of materials, including glass (but not quartz) and most clear plastics, so it is possible to safely observe a UV-C system if you are looking through a window

Why UV C

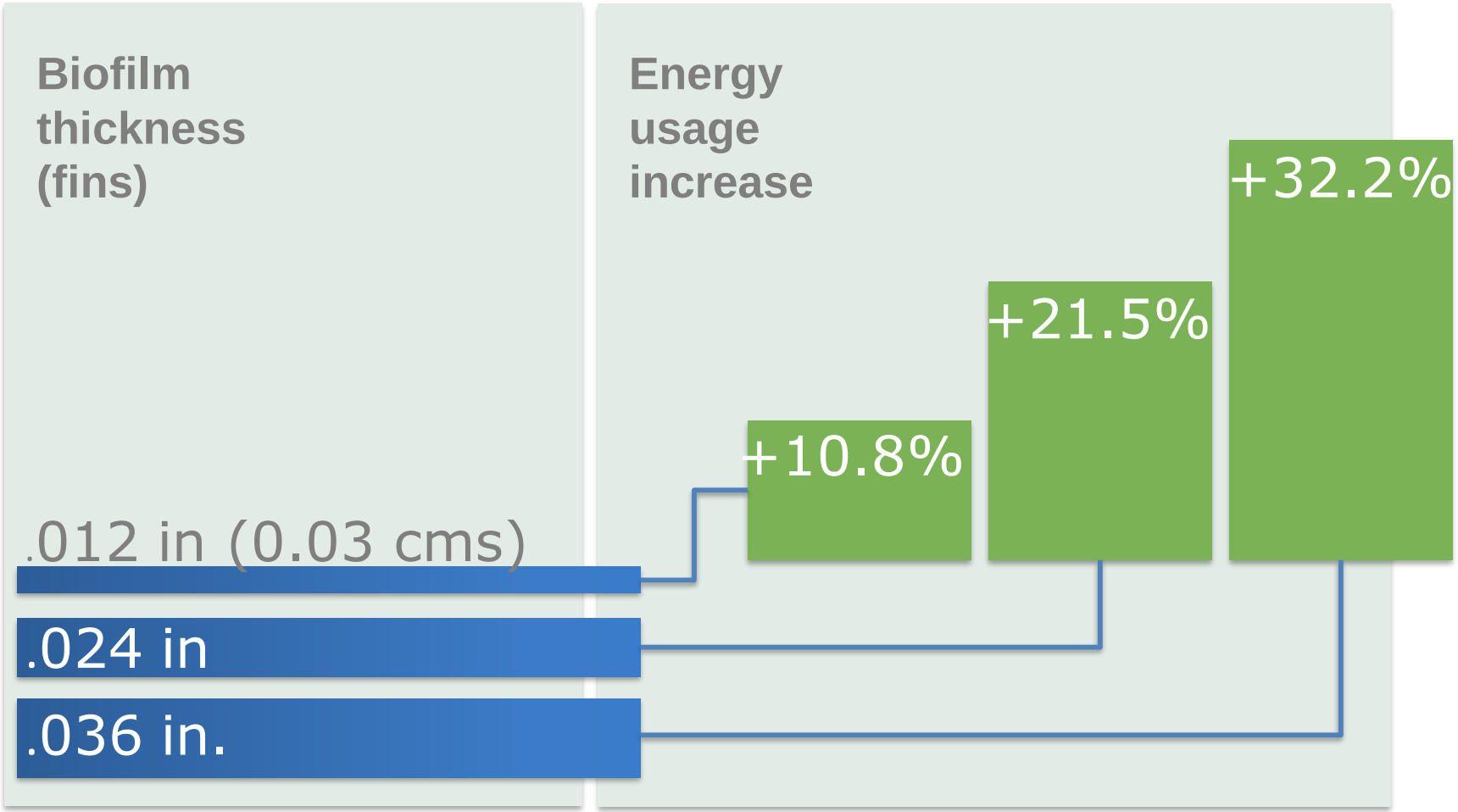

Your air conditioning system is delivering a lot more than cool air.


Disease
Inflated energy bills
Higher operating costs

Culprit – Biofilm

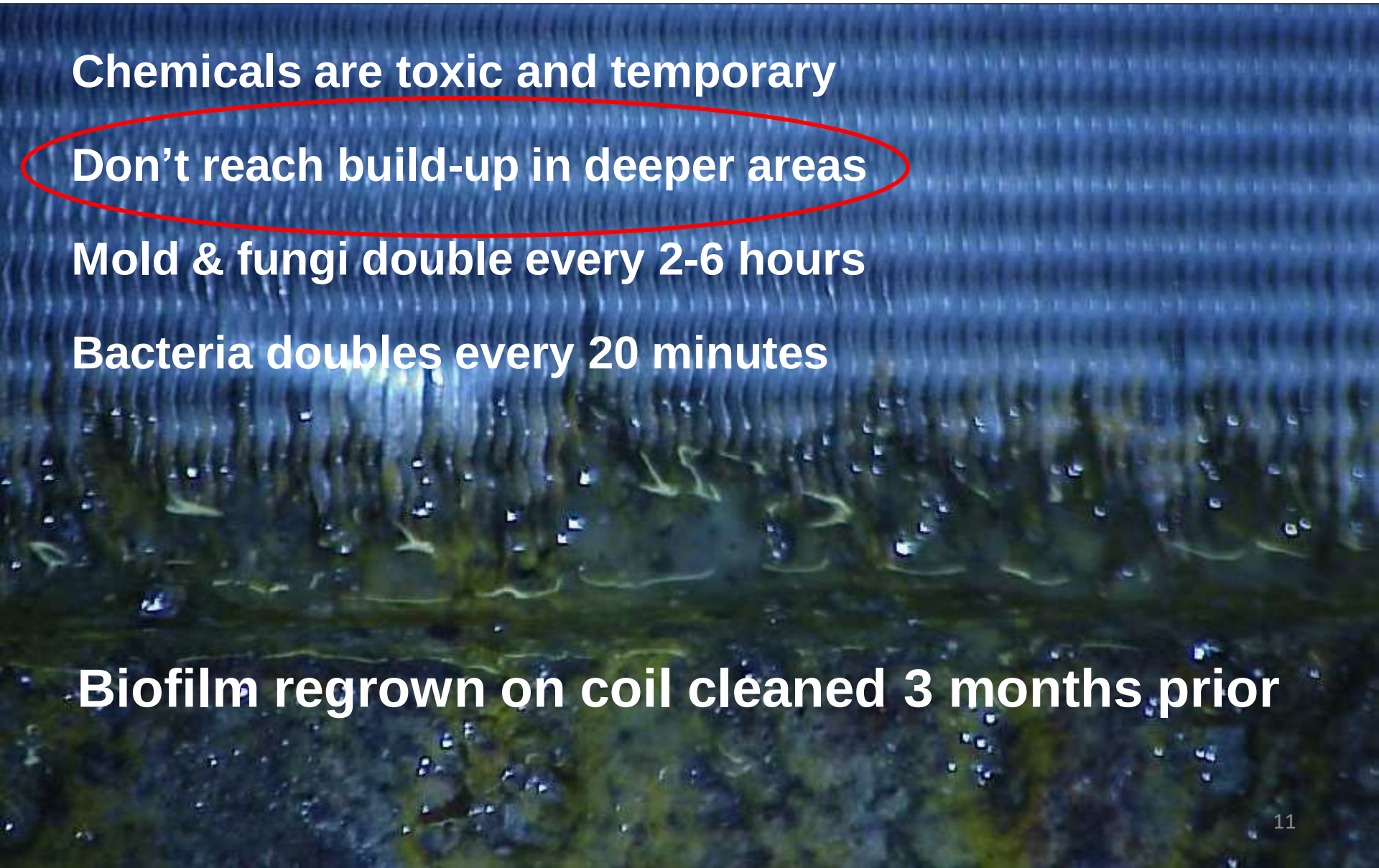
A harmful, tenacious microbial matrix that thrives in all HVAC.

Effect of Biofilm on Energy Usage



HVAC uses 60% of a building's energy

Chemical cleaning has no effect



Chemicals are toxic and temporary

Don’t reach build-up in deeper areas

Mold & fungi double every 2-6 hours

Bacteria doubles every 20 minutes

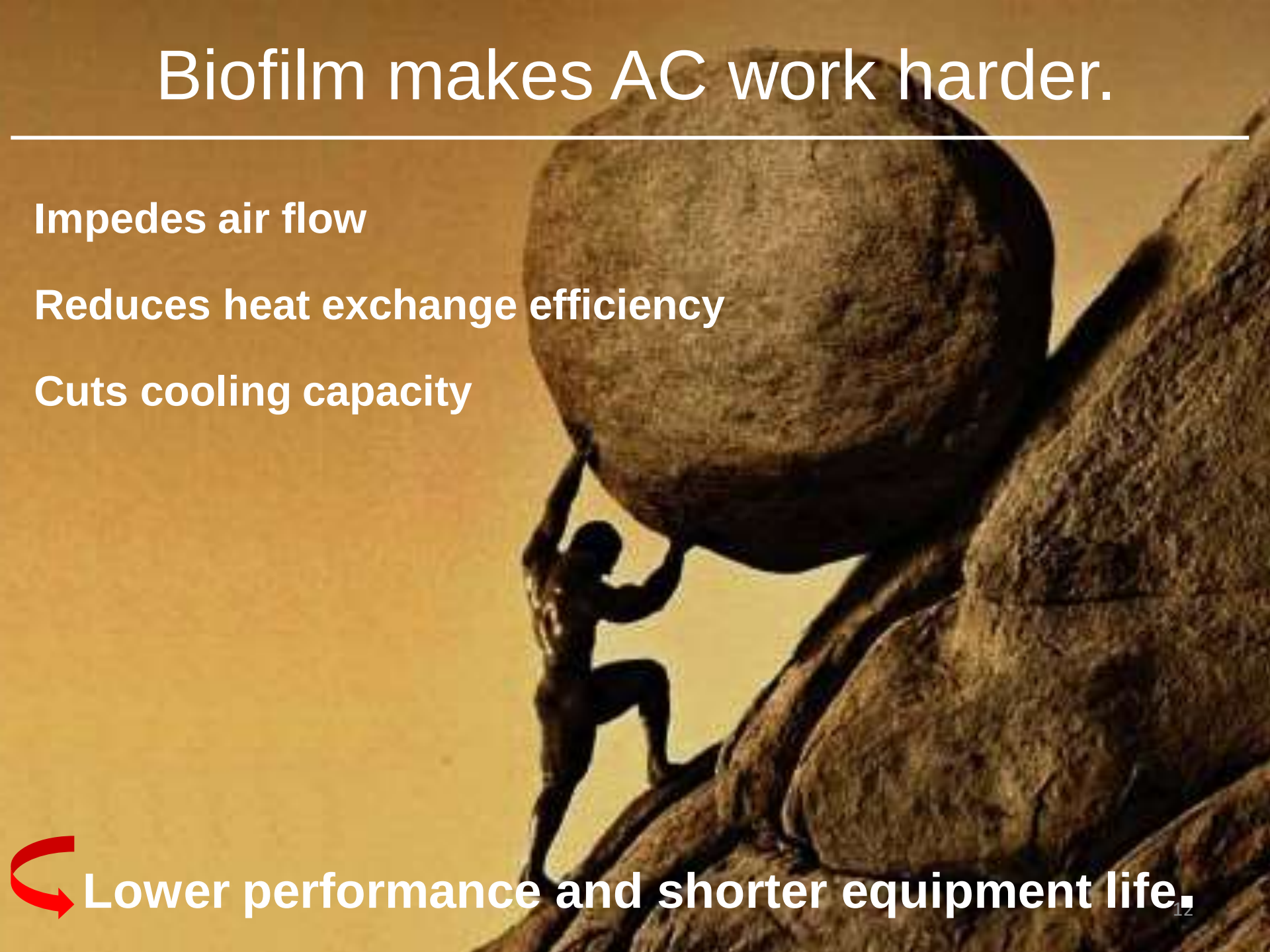
Biofilm regrown on coil cleaned 3 months prior

Biofilm makes AC work harder.

Impedes air flow

Reduces heat exchange efficiency

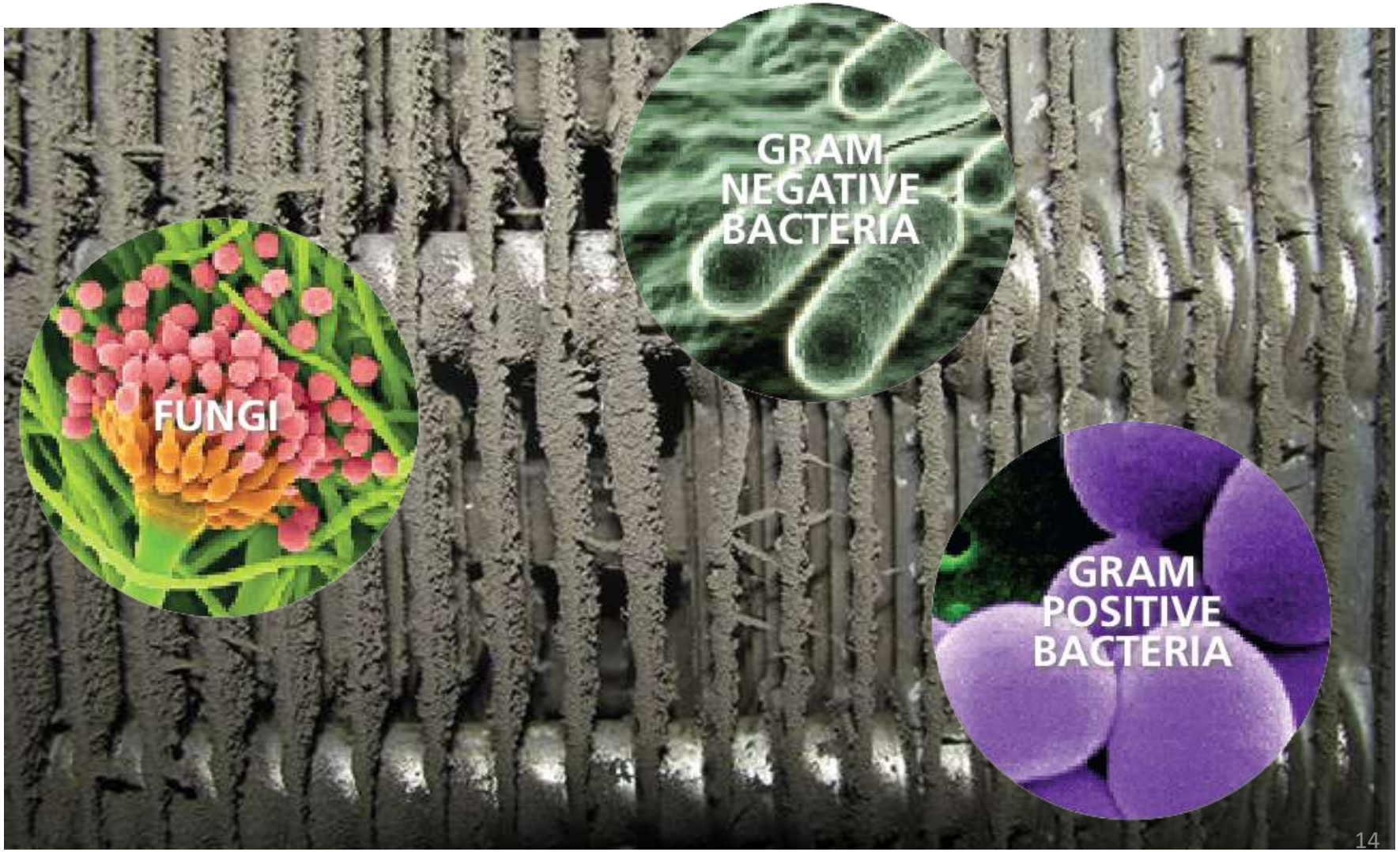
Cuts cooling capacity



Lower performance and shorter equipment life.

What about the human costs ?

Harmful organisms in biofilm detach and enter the air stream.



Studies link asthma, allergies and disease to microorganisms in biofilm.

Including pathogens implicated in Hospital Acquired Infections

Effect of bad IAQ on every facility

Hospitals: from reimbursements to ratings

Schools: absenteeism

Food manufacturing: food safety

All buildings: productivity; liability

The Answer

STERIL-AIRE®

UV C

Simple, Sustainable & Affordable solution.

What does Steril-Aire technology do

1. No more toxic, costly and ineffective chemical cleaning of HVAC machines

2. Reduced illness caused by bacteria , viruses & spores.

3 HVAC machines run more efficiently and last longer.

4 Savings of 15% to 30% on energy bill.

Detect growth of microbes in HVAC units

Petri dish Test

Before Installing UVC Lamps

After Installing UVC Lamps

Detect Room Contamination -Air Sampling Test

The MicroBio MB1 is a bioaerosol sampler

Uses both a 90 mm or 55 mm Petri Dish

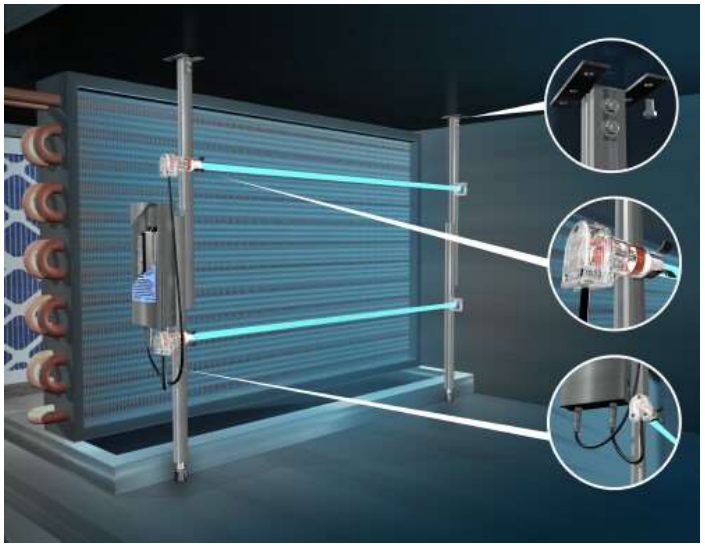
220 and 400 hole sampling head option

The sampler collects airborne micro-organisms by drawing a stream of air at a constant flow rate through a series of small holes in a metal head.

Particles suspended in the air stream impinge onto the surface of the petri dish.

Contaminants if any can be seen growing on the Petri dish after a period of 2 to 3 days.

STERIL-AIRE - UV C devices



Emitters used in HVAC units

Room Disinfection unit

Hand held device to clean surfaces

In Ceiling disinfection unit

Thank You