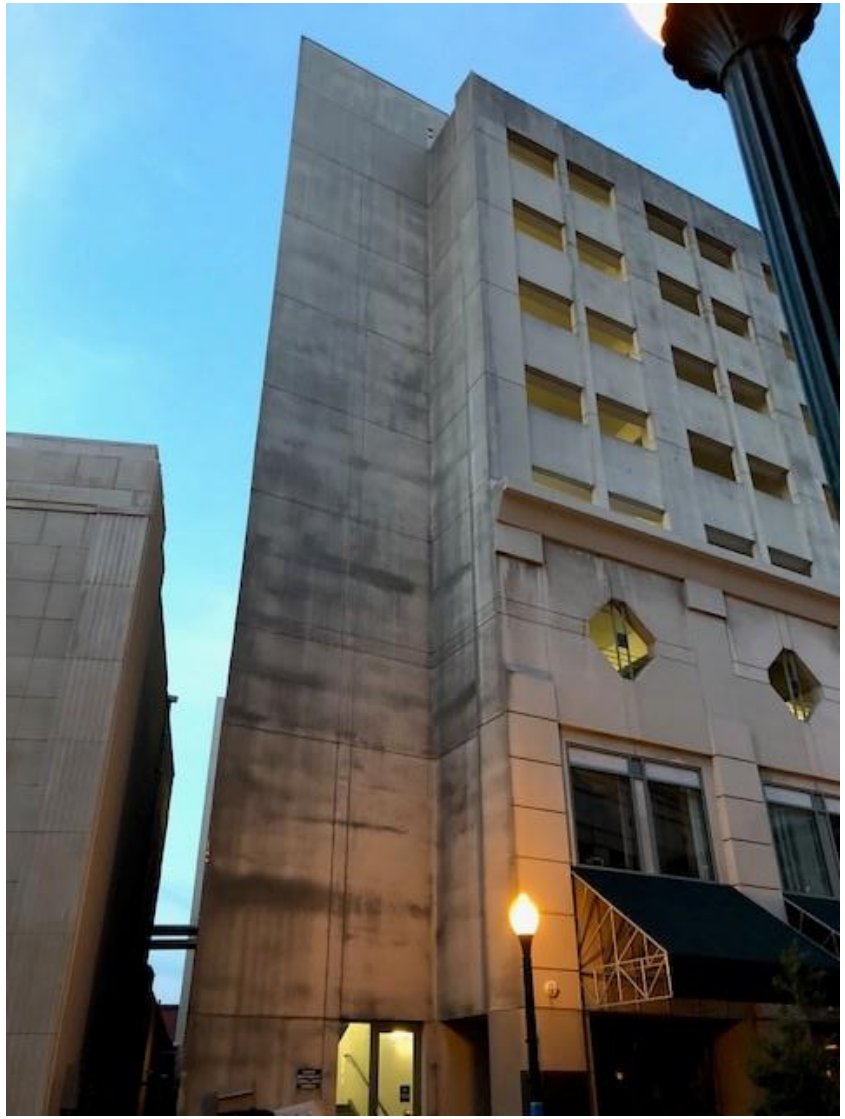
Gloeocapsa Magma

What is it, Why is it, How do we deal with it and

How to we design against it……



Learning Objectives

- What is this black growth about.
- What it isn’t.
- What promotes and what retards it.
- How do we remove it.
- How do we prevent it from returning.
- How do we prevent it in new design.

Presentation Style

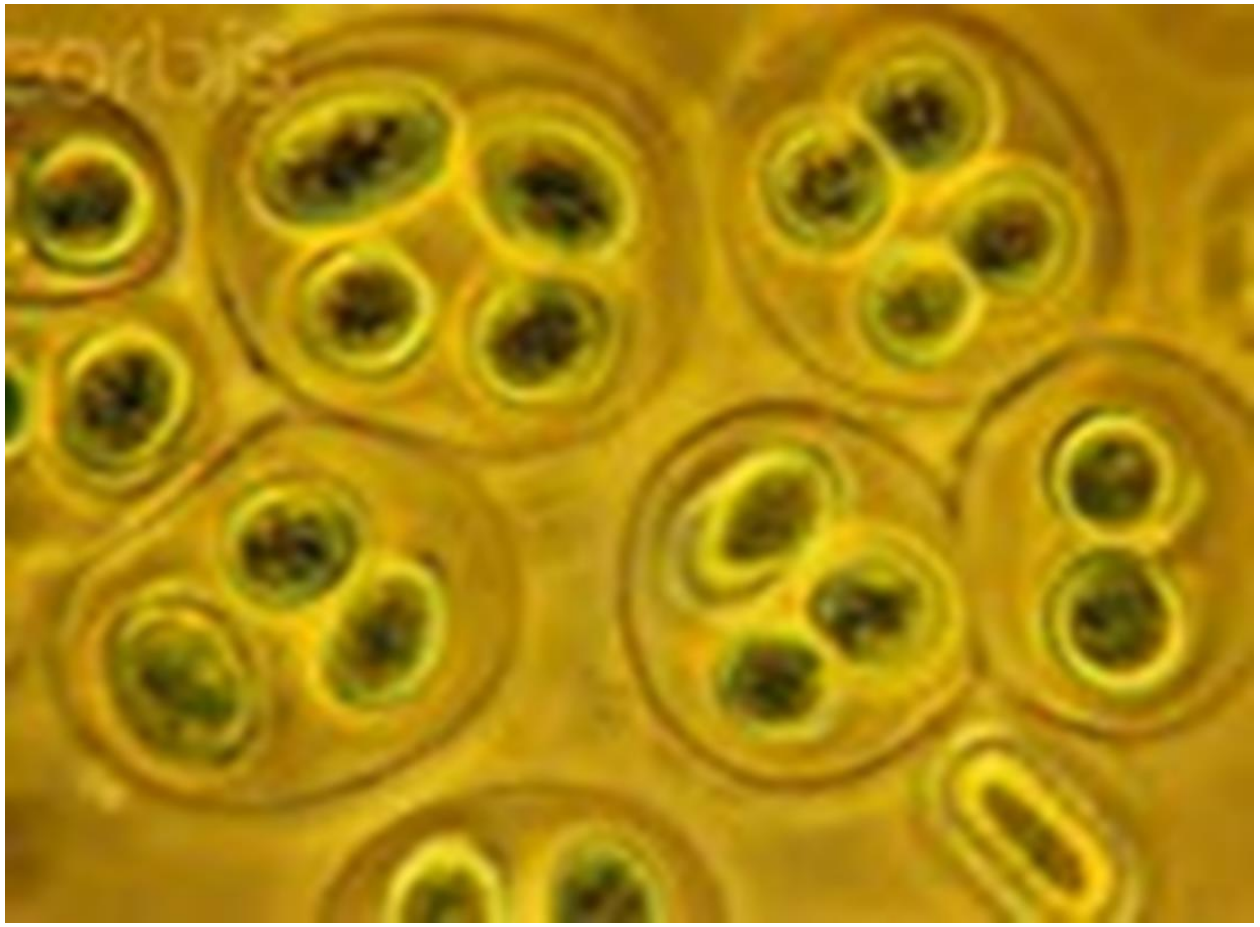
- I am going to present in a fashion that explains how this alga works on other substrates that we are also familiar with.
- If the substrate has a host material of calcium carbonate….It's a problem.
  - Limestone
  - Marble
  - Cement
  - Mortar

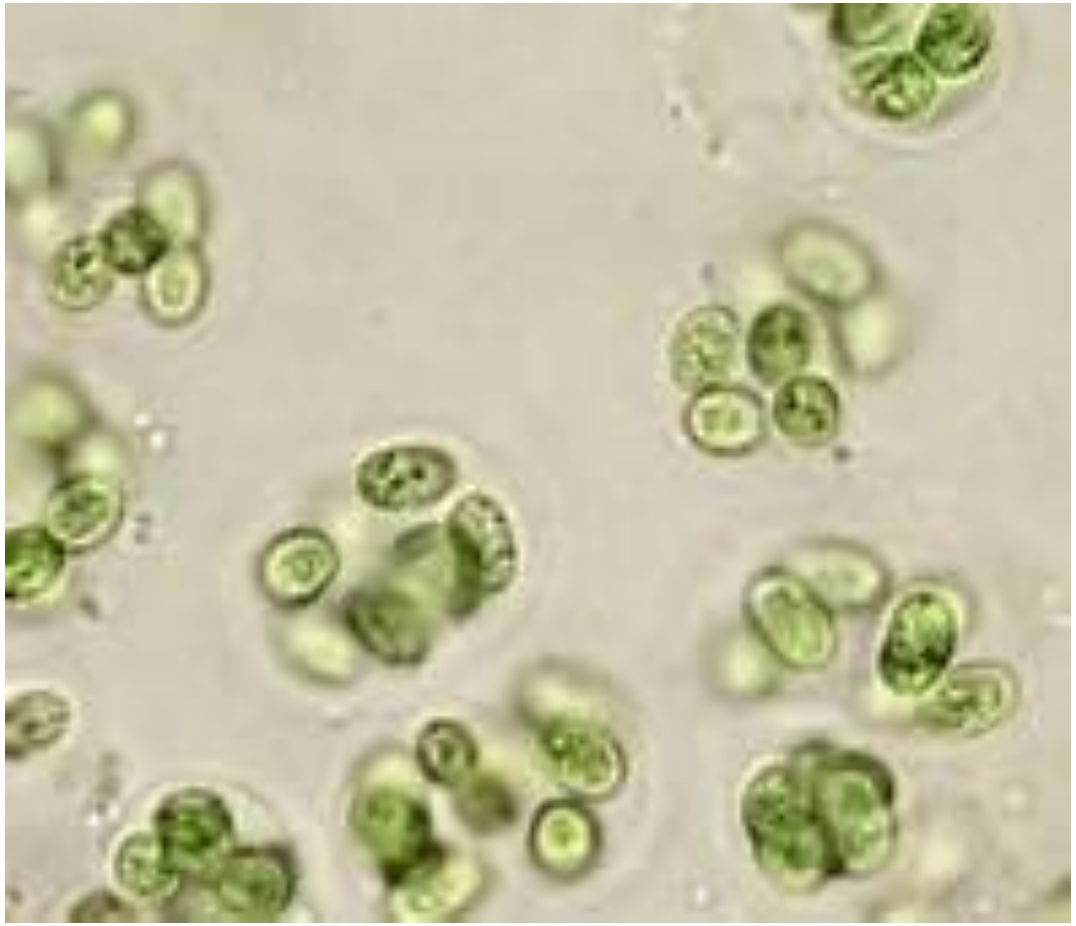
Gloeocapsa Magma

- Kingdom = Bacteria
  - Basically, it is a blue-green algae. (NOT A BLACK MOLD)
  - This is a world wide concern.
  - It began regionally in the southeastern United States as a problem and is now spread to the Northeastern states.
  - Feeds off of: Calcium carbonate.
  - Needs moisture, light and food.

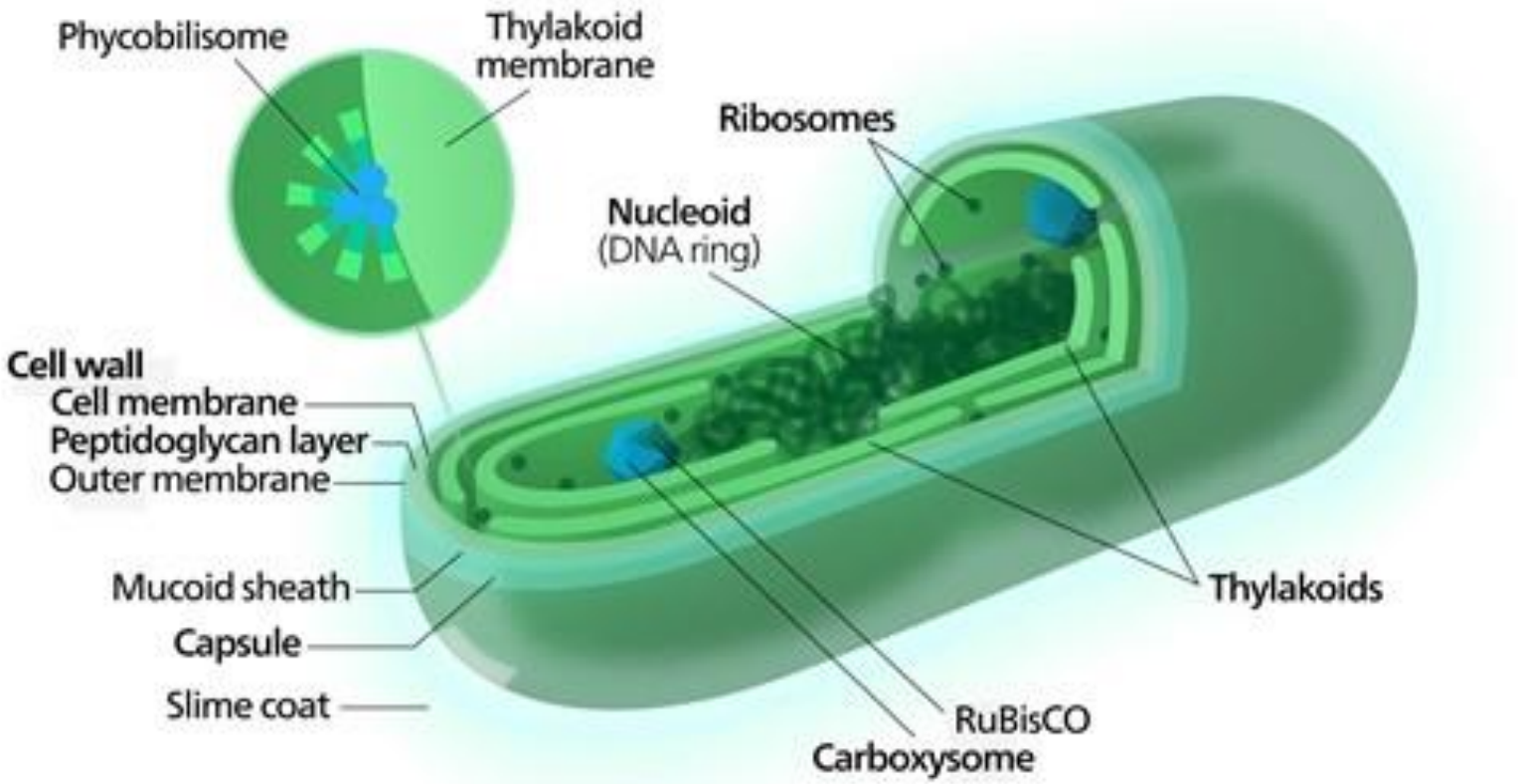
What is It

GLOW CAPS

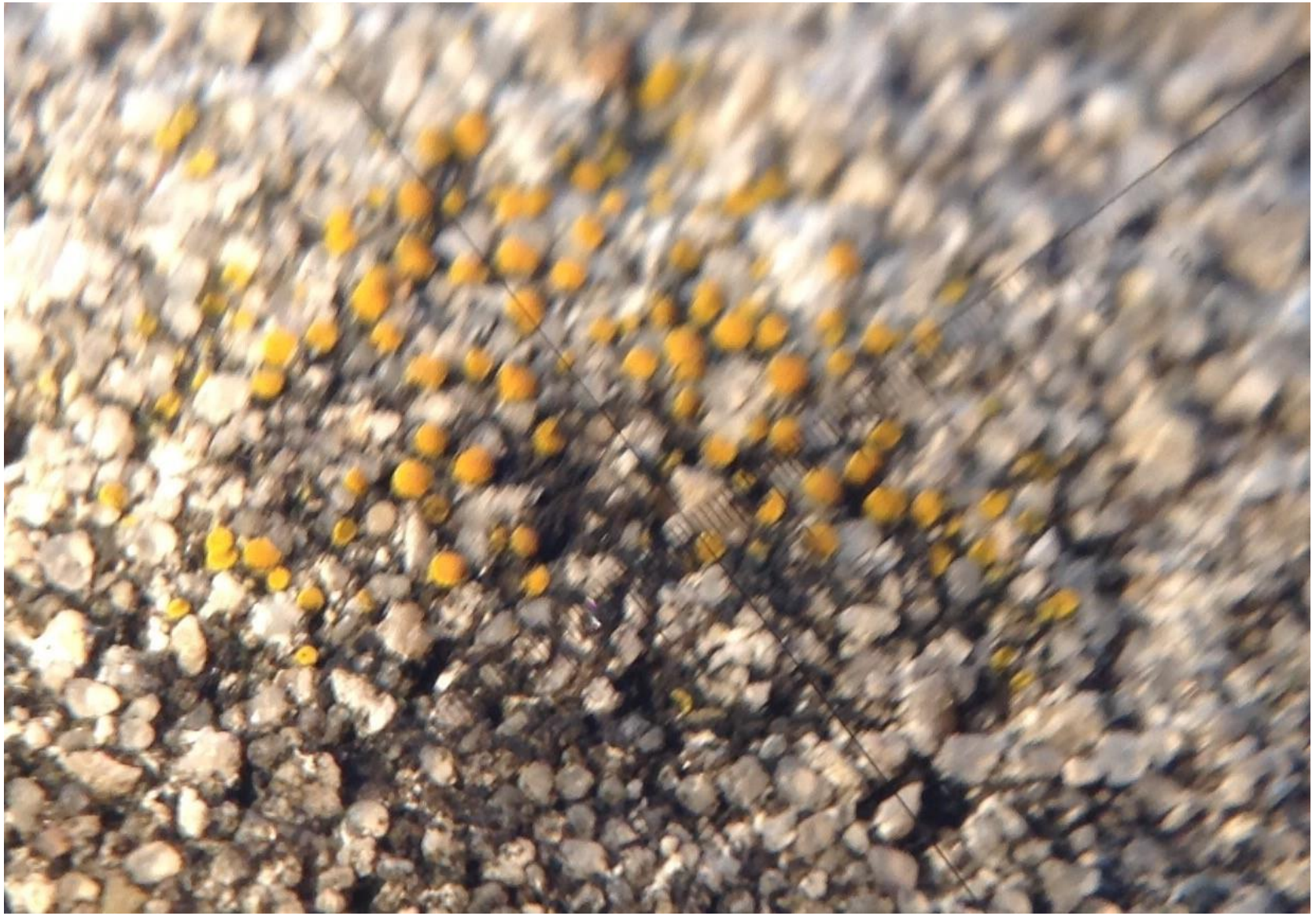


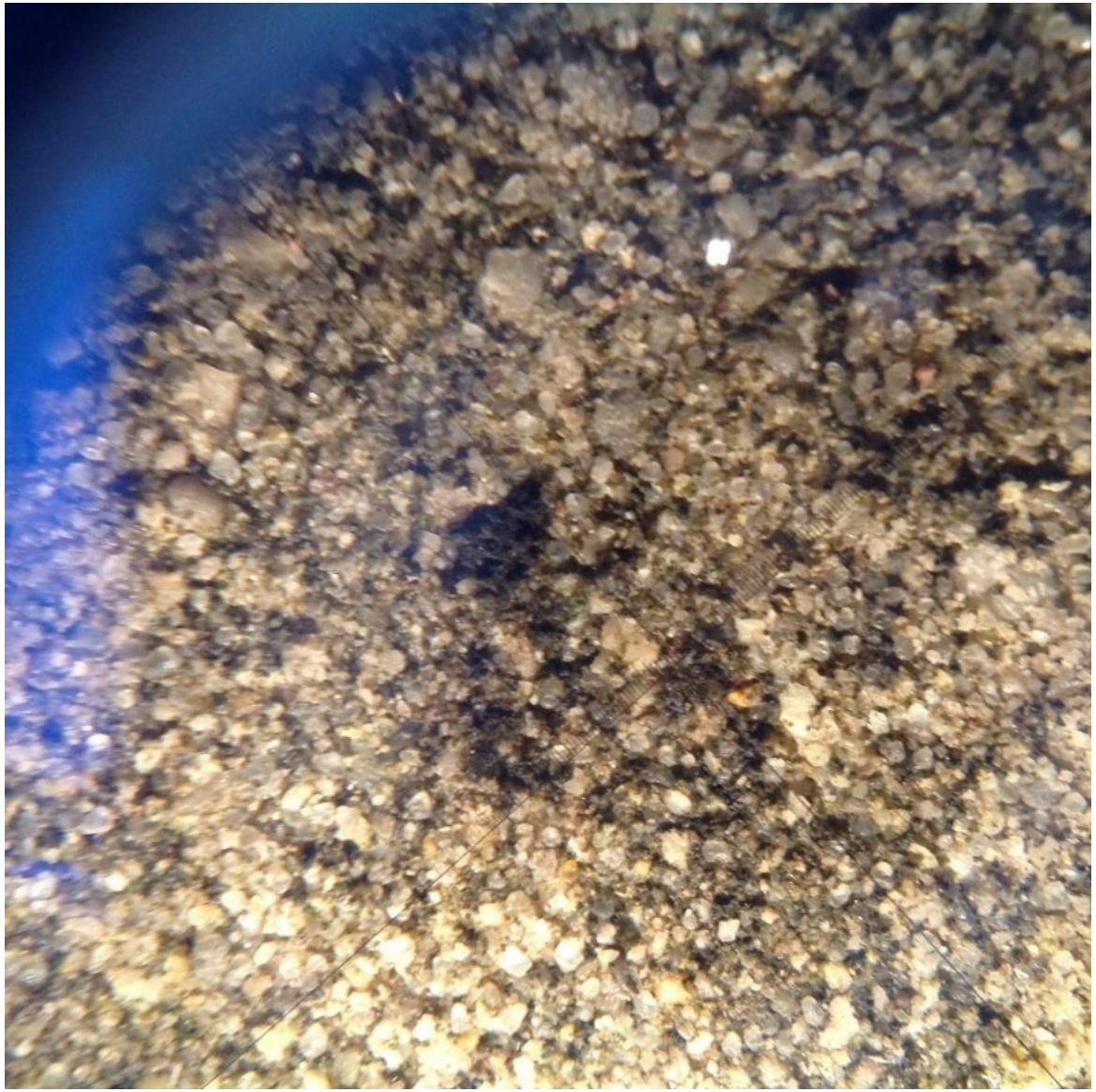


Cell Structure



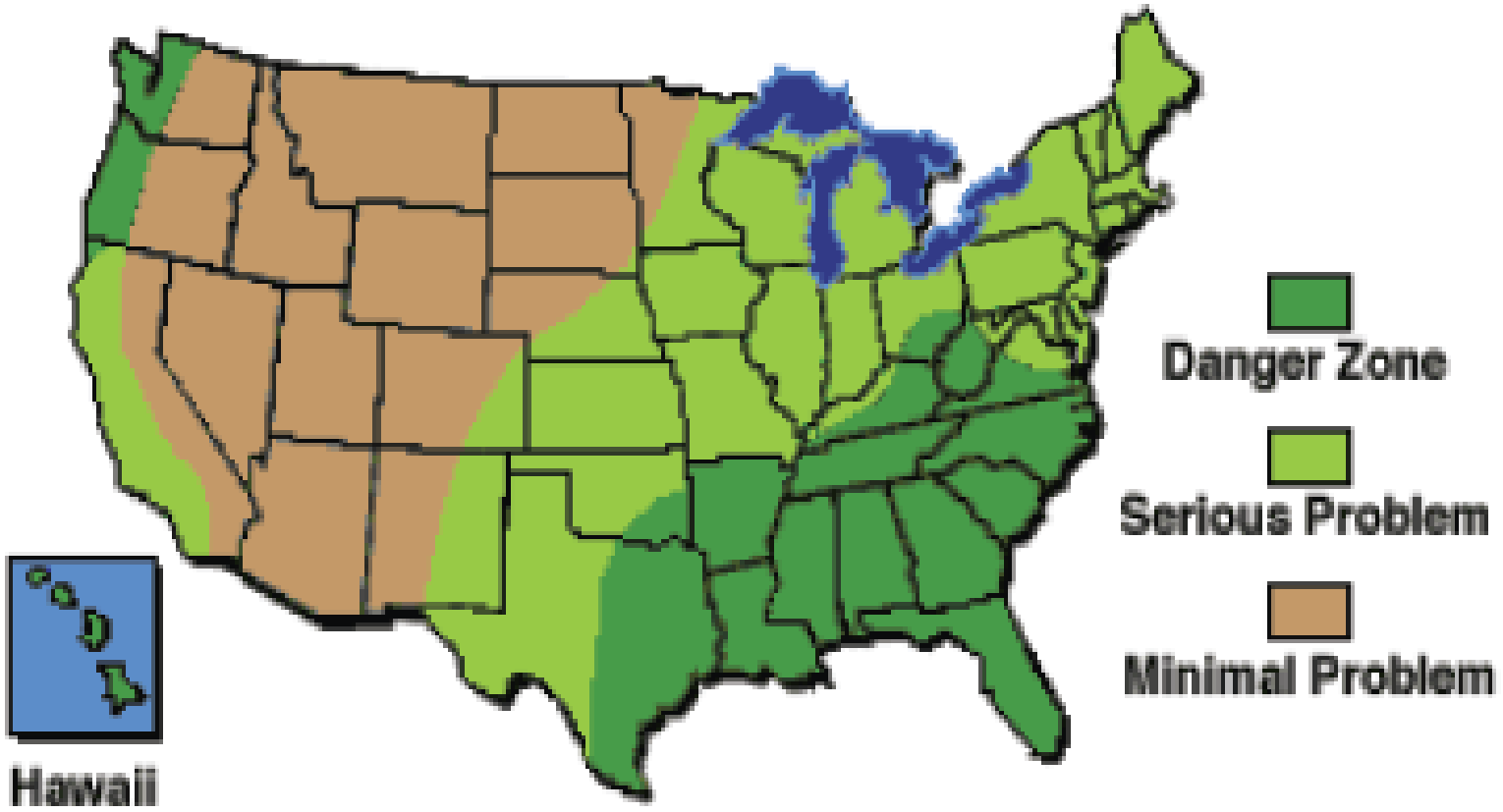
Sporulate





Where is it

Algae Danger Zone Map

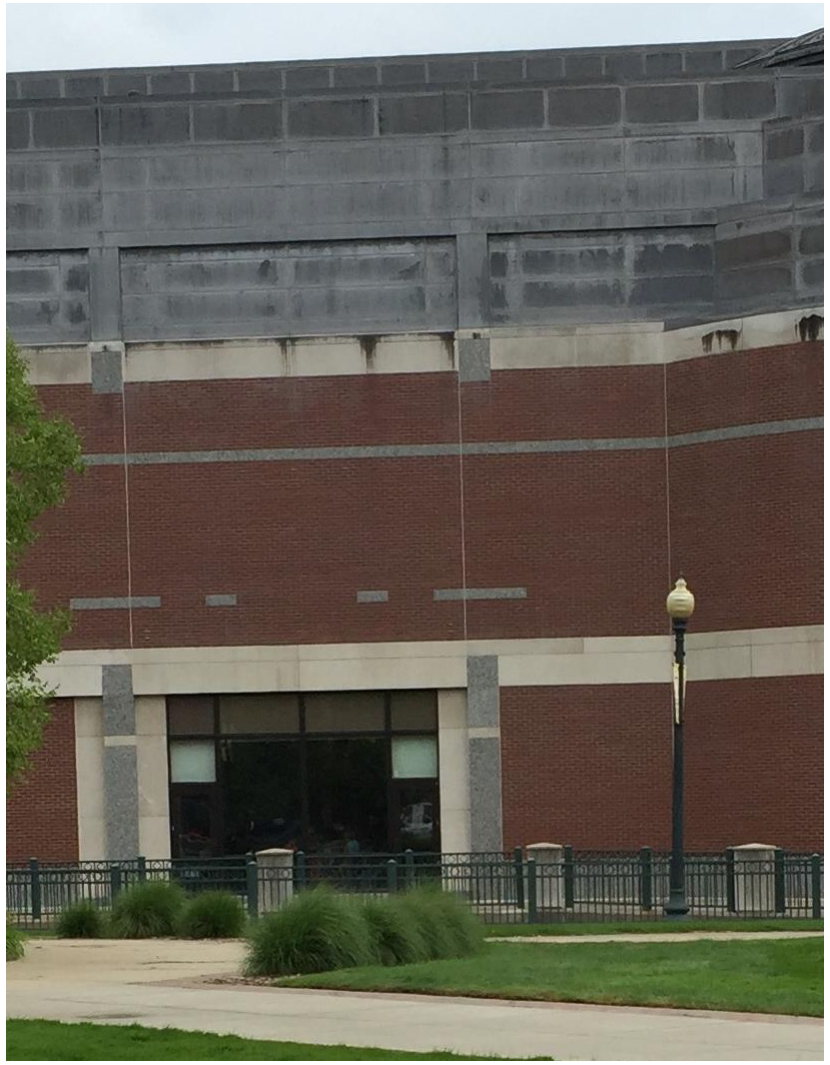



OTSEGO HIGH SCHOOL
STOP


Otsego High School

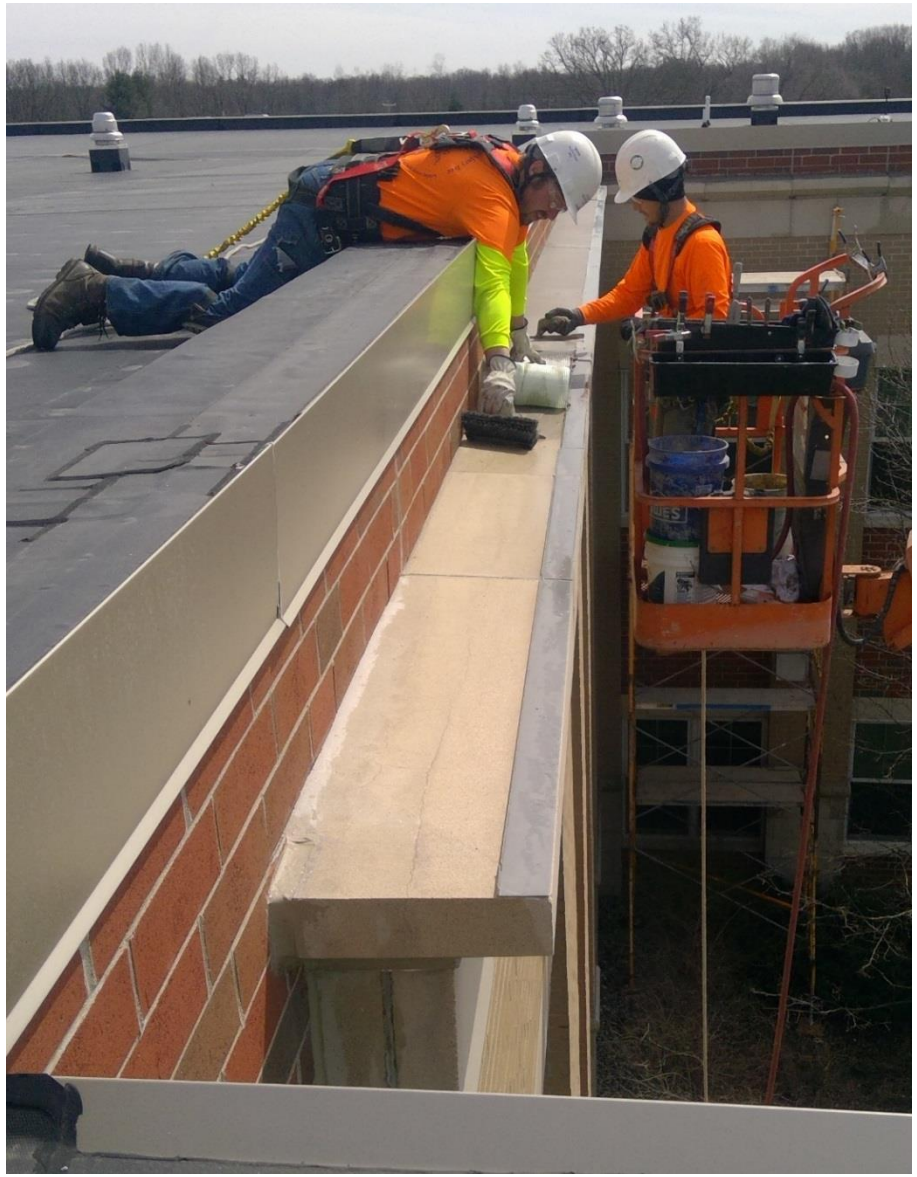

GREENLEAF
TRUST
211 SOUTH ROSE


Cutler Rd



What Promotes It

What Retards it




1950
SUPERIOR
PRECAST
PRODUCTS INC
SUPERIOR GRAVEL


PARKING

Removing it


Genie S-65
S-65


HORIZON
BANK
Do Not Enter


HORIZON
BANK
Do Not Enter

2008 ------- 2016

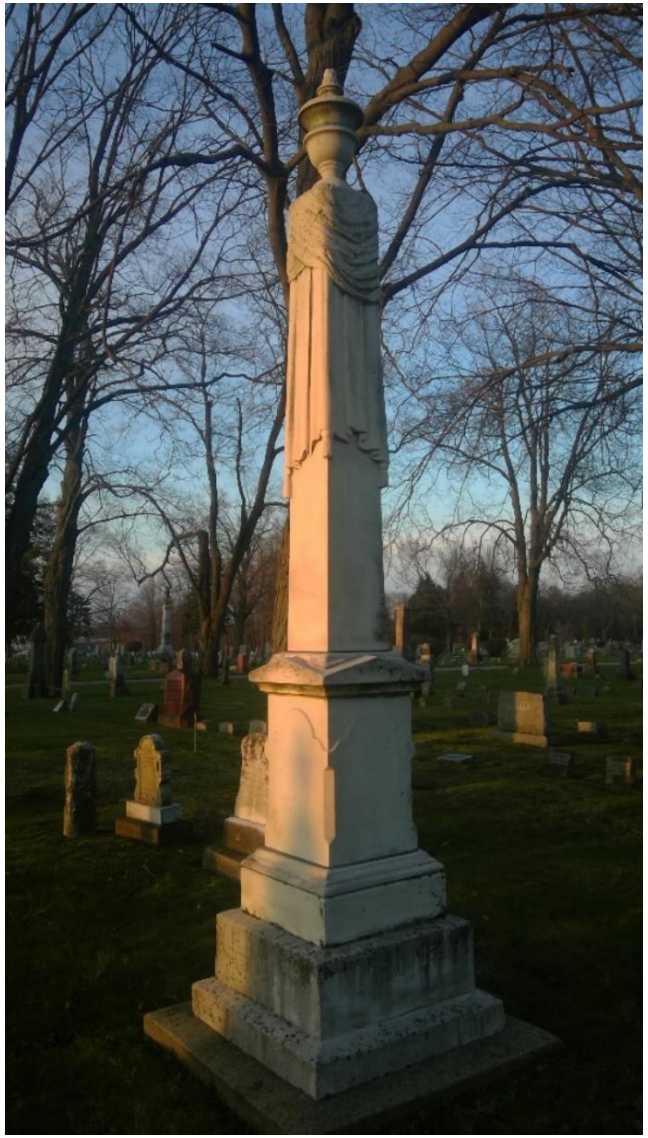

KROGER

2011 ----- 2016

Killing

- Chemicals used to get rid of blue-green algae blooms includes: calcium hypochlorite, copper sulfate, cupriade, and simazine.

Preventing it



Oxide Wash Down

Active Killing Agent

Improvements or Repair

- Install drip in overhangs.
- Reverse slope caps.
- Caulking;
  - Use neutral cure silicone.
- Algae Killing.
- Seal.
- Zink Strip Installation.

Killing it Right and Wrong

- Round 1
  - Kill it without damaging
    - The Material itself
    - Glass
    - Aluminum
    - Steel
    - Surrounding media
      - Sealants & gaskets
    - Landscaping
    - Air quality
  - Saturate
  - Consider just what your using

Round 2

- Scrape
- Brush
- Rinse
- Power Wash, super heated or low pressure steam
- Stain removal

- Round 3
  - Moisture reduction. Penetrating sealer. Solvent based.
  - Consider how the façade will look on wet days.

- Round 4
  - Flashing systems
    - Zink, Lead, Copper.

Specification & Repair Considerations

- Noise disturbance
- Not repairing the sealants
  - What's going on behind the stone and secondary waterproofing
  - Continued Cast stone saturation
- Just washing concerns
  - Spreading the alga (spreads growth)
  - Erosion of the cast stone (accelerates future growth)
- Competitive Bid
  - You DO get what your paying for so look at the inspectors qualifications.

Where to GO from here?

- Design with water run off direction in mind
- Provide greater overhangs
- Consider sealant selection
- Flashing overhang
- Biocide in concrete mix
- Zink additive into the concrete mix
- Sealer application
- Maintenance guide to the owner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