golf industry show

GCSAA Education Conference | Trade Show | GCSAA Golf Championships

San Diego Convention Center | February 6-11, 2016

EVERYTHING UNDER THE SUN

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Bats! Without Harming the Player Experience

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Victoria National

Victoria National Background

- Victoria National is located in Newburgh, Indiana and consists of 960 acres
- The course was purchased and originally owned by Terry Friedman and designed by Tom Fazio.
- Of the 960 acres the course sits on roughly 400 acres.
- The remaining 560 acres is split between future development (350 acres), lakes, and woodlands.

Bats at Victoria National

- Upon construction, it was pretty clear a solution to the insect problem at Victoria National would need to be addressed.
- Fogging?
- Player Experience
- Solution

Audubon Sanctuary

- Here at Victoria, we take great pride in our environmental efforts and continue to maintain our Audubon certification.

- One way we do this is the construction of our five Bat Houses.

Benefits of Bats

- Bats have many benefits to an ecosystem; the main being insect control.
- 70% of bat species feed on insects.
- A single brown bat can consume up to 1000 mosquito sized insects per hour.

Busy Bats

- 500 Insects per hour
- 3,000 Insects per night (6 hours)
- 720,000 Insects per year per bat (8 months)
- 180,000,000 Insects per box per year

(250 bats per box)

- 900,000,000 Insects per year

(5 boxes with 250 bats)

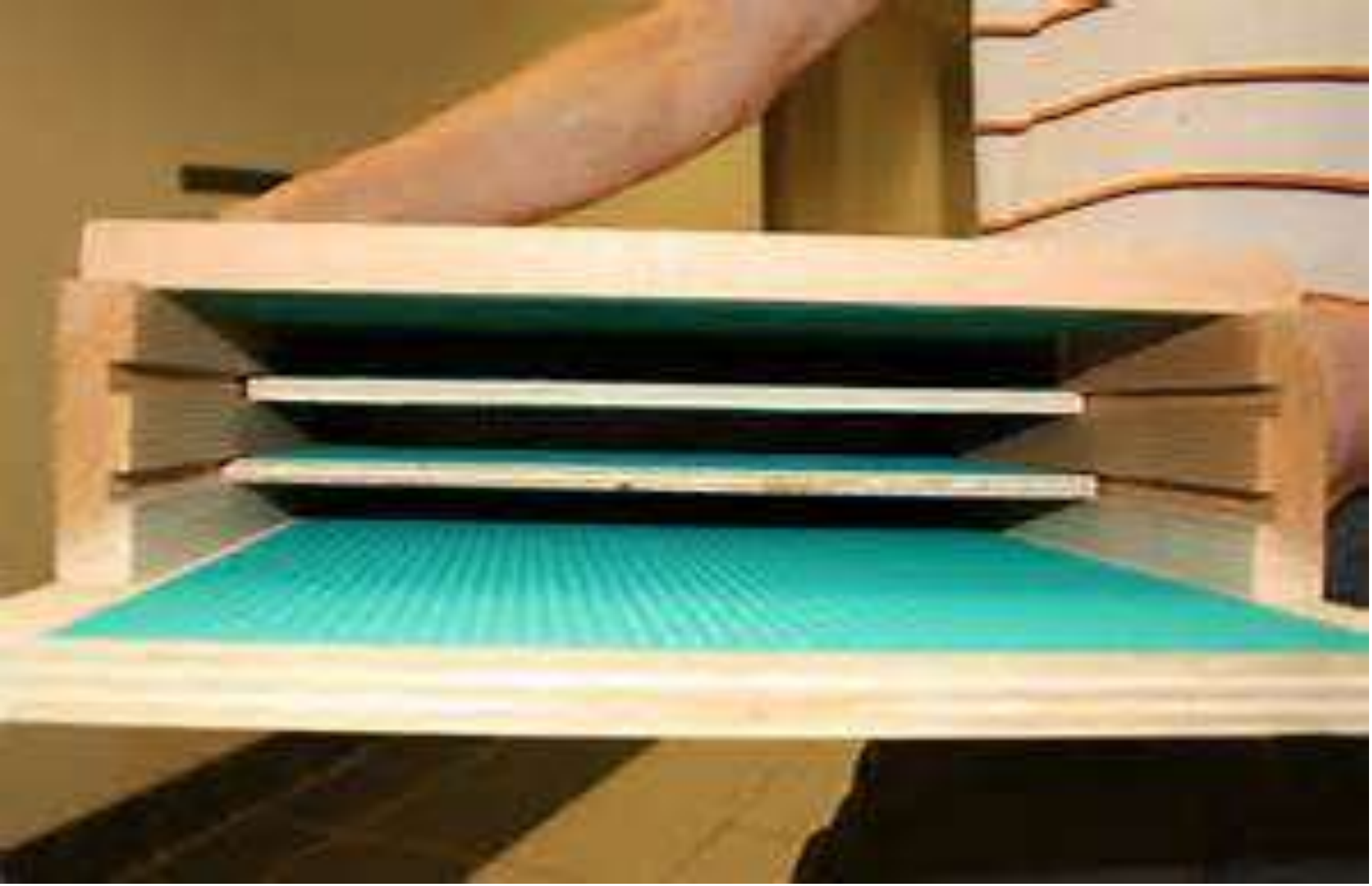
Bat Houses

Things to Consider

- Bat House Size/Design
- Mounting
- Location
- Temperature
- Timing
- Installation
- Predators

Bat House Size/Design

- At least 24 inches tall
- At least 14 inches wide
- Single or Multiple Chamber House
- Ventilation
- Mesh Lined Chambers
- Color



Mounting

- Mounting should be on a pole or existing building with at least 8 hours of sunlight per day.
- Never mount bat houses to metal siding, trees, or street lights!
- Mounting should be 15-20ft in the air.

Location

- ¼ mile to natural body of water
- 30 foot from existing cover (predators)
- Best results have been found when placed in areas of diverse habitats.
- Installation near high insect populations will increase your chance of success.


Untitled Placemark
W 87°21'
177 ft
1992
© 2015 Google
Google earth
38°00'23.29" N 87°20'53.74" W elev 386 ft eye alt 1161 ft

Temperature

- The temperature of a bat box is very crucial. Needs to range from 80-100 degrees Fahrenheit.
- This can be achieved by placement in an area that receives 8-10 hours of sunlight daily.
- The color of your box will also help maintain temperature.

Timing

- Bat boxes can be installed at any time during the year but the best results occur just out of winter as temperatures begin to rise.
- Bats come out of hibernation and look for places to roost in early spring.

Installation

- We used 20ft 4x4 pressure treated lumber.
- Dug a 2ft deep hole and added 2 bags of concrete per box with a gravel base (2 inches).
- Total Materials for 5 bat boxes
  - (5) 20ft Posts (Pressure Treated)
  - (10) 50lb. bags of concrete
  - (1) 20ft 2x4
  - Labor: 18 hours (3 guys 6 hours)

Costs

- Bat Houses-$65 each/ $325
- Lumber- 4”x4”x20’ $30 each/ $150
- Lumber- 2”x4x12’ $7
- Concrete- 50lb bag $4 each/ $40
- Labor- 18 hours x $10 per hour/ $200
- **TOTAL= $722**

Predators

- Snakes
- Hawks
- Owls
- Raccoons
- Minks
- Weasels

- The destruction of natural habitats and the spread of disease has made humans the largest predator of bats.

- Throughout the United States, scientists estimate, bats are worth more than $3.7 billion a year in reduced crop damage and pesticide use. And that, of course, means fewer pesticides enter the ecosystem.