

Landscape Design for Defensive Gardening

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UNIVERSITY OF
MARYLAND
EXTENSION



Michelle Caracaus Long
Security by Design
Consulting LLC





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U.S. Department of Agriculture
Office of the Assistant Secretary for Civil Rights
1400 Independence Avenue, SW
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fax:

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program.intake@usda.gov.

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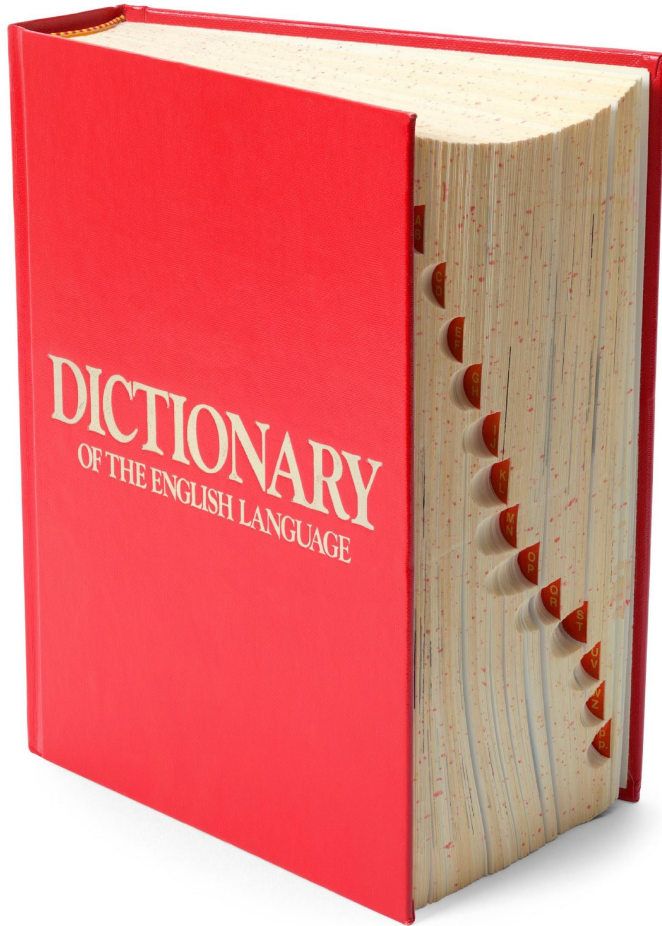
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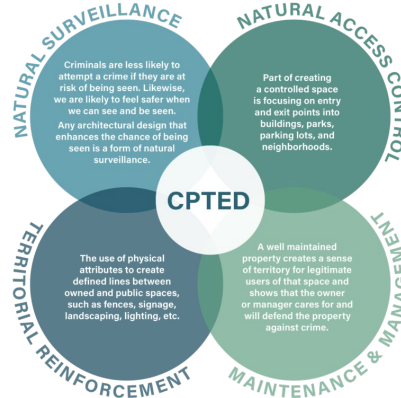
Definition: “Landscape design” is the process used to develop aesthetically pleasing and functional outdoor spaces. – Association of Professional Landscape Designers

Landscape architecture: Landscape design
Home construction: Design interior spaces



Crime Prevention Through Environmental Design Principles

- Natural surveillance - improve sight lines
- Natural access control - non-physical/psychological barrier
- Territorial reinforcement - well defined spaces
- Maintenance and management - looks used



*Image Source: Paragon
Architecture 2021



Landscape Design

- Develop a Base Plan
- Site Survey
- ID landscape uses
- Design
- Install

CALL BEFORE YOU DIG

Before you start digging, always contact Miss Utility to mark your utility lines.

Call 811 or 800.257.7777

Monday through Friday

7:00am to 5:00pm



You can also visit their website and submit a “locate request” online:

missutility.net

Please schedule a minimum of 48 hours in advance, excluding weekends and holidays.

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Activity:

Base Plan and Site Survey

- Rough sketch house dimensions and property lines
 - Optional: Get official plat plan from county
- Environmental factors: sun, shade, wind, soil, water, slope

■ or □ = Structure (square or rectangle)

○ = Tree

✿ = Flower (circle with petals)

🌲 = Cluster of trees or wooded area

→ / ← / ↑ / ↓ = Directional flow or traffic

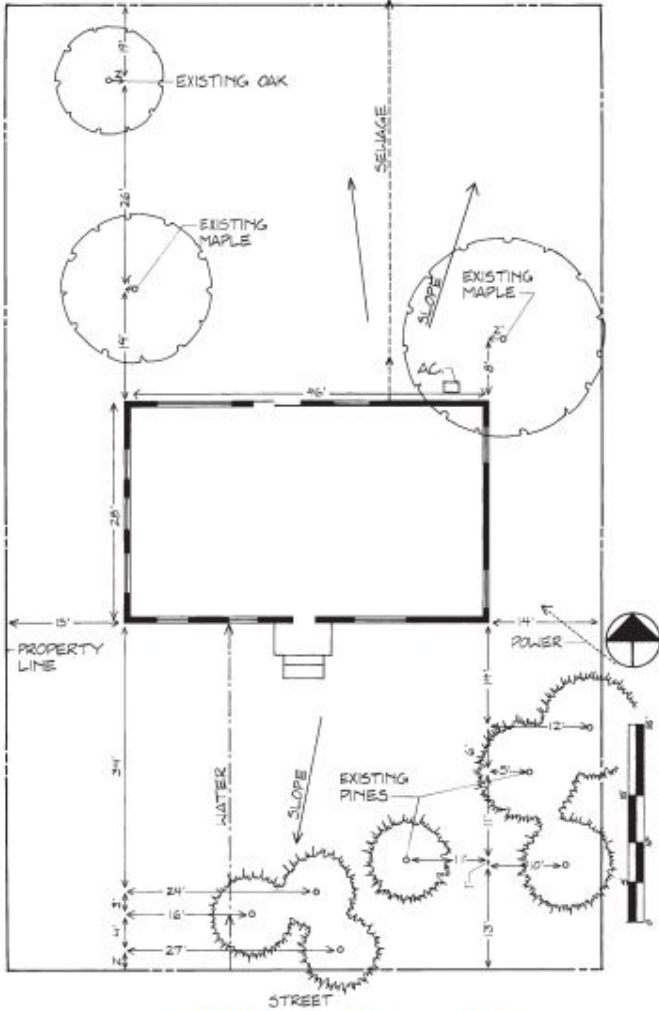
⚡ = Power box / Electrical service

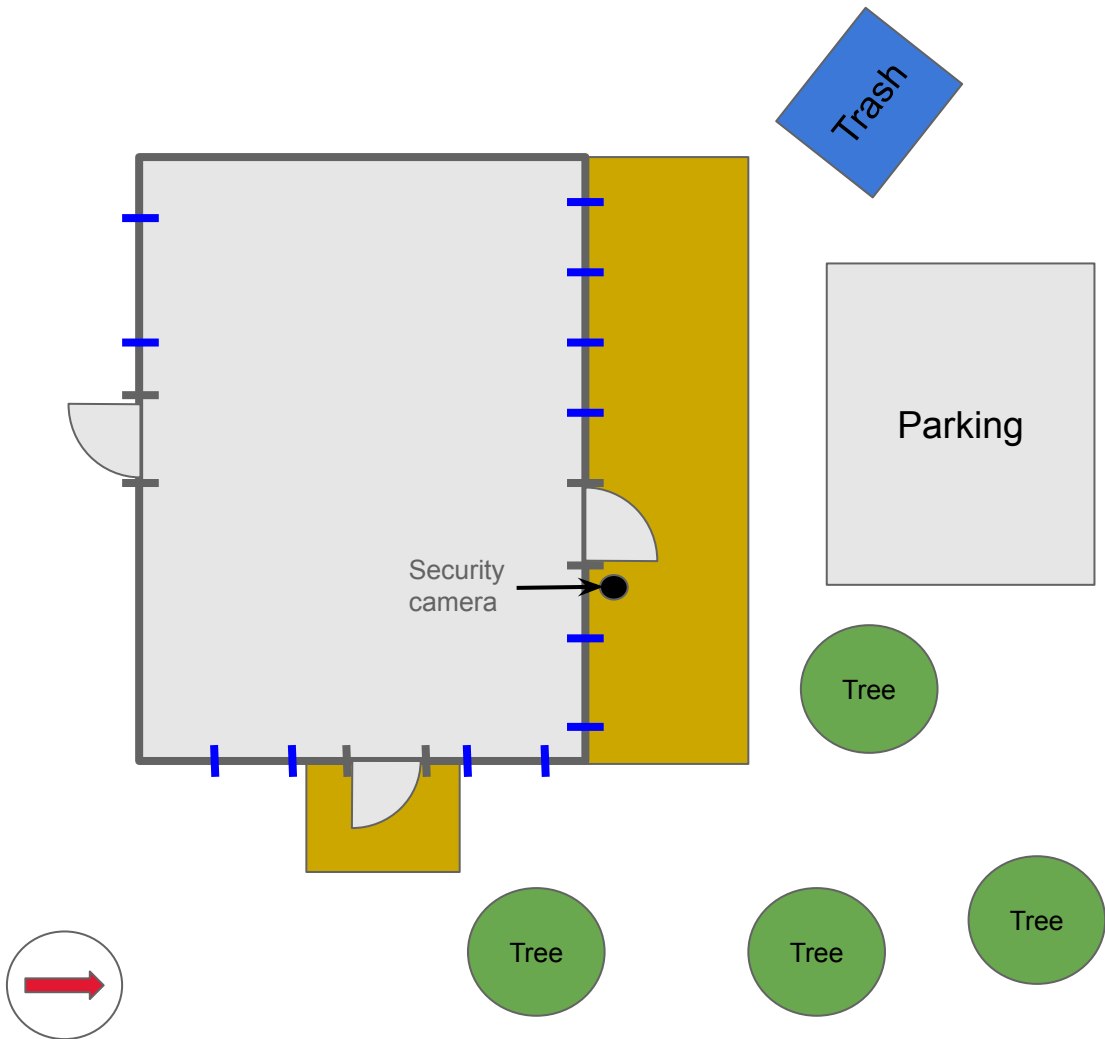
💧 = Well / Water source

🔥 = Gas

🛢️ = Oil tank

(S) = Sewer / Septic





- Windows
- Doors
- Power
- Water
- Trees/shrubs

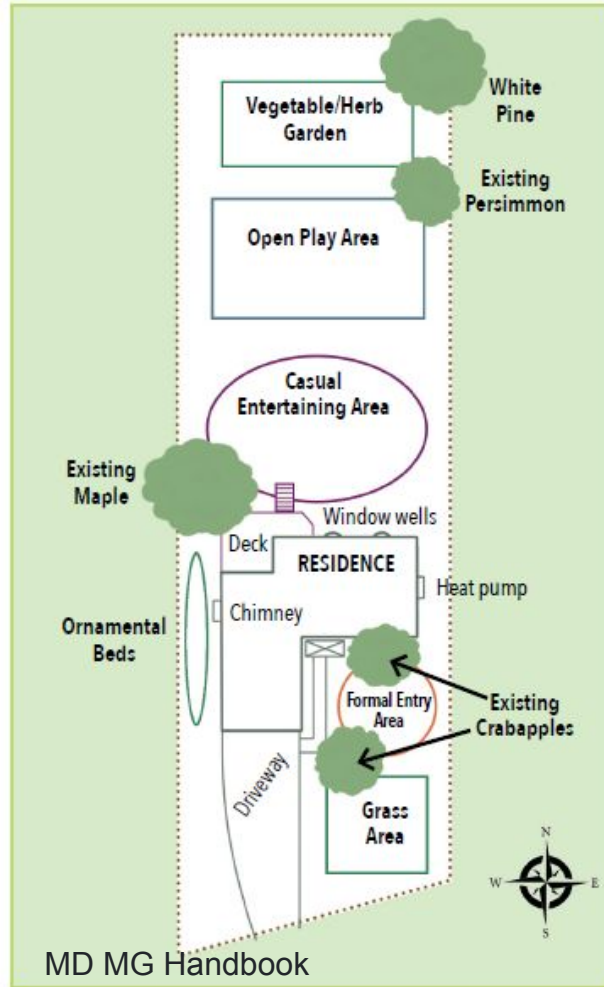


ID Landscape Uses:

What is design purpose?

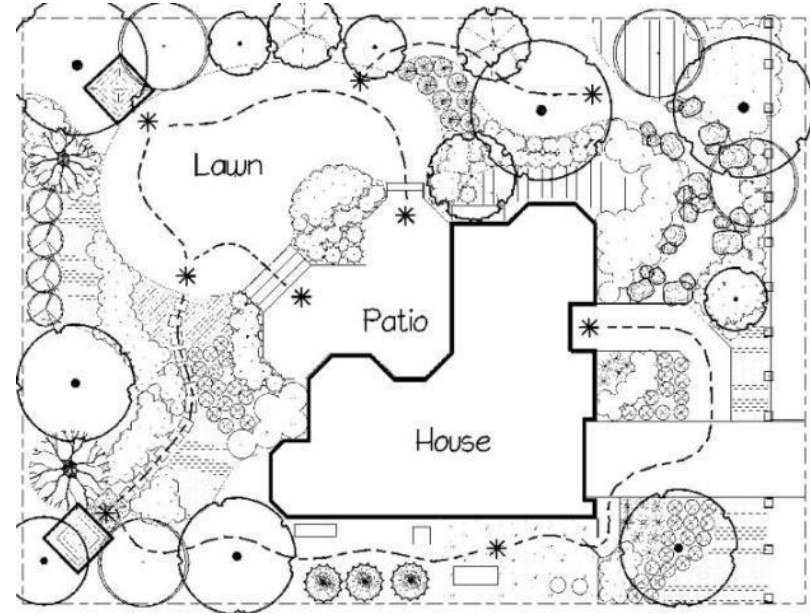
- Extend living space?
- Direct traffic?
- Activity areas?
- Something to showcase?
- Do you have site problems?
- Space for gardening?
- How much time do you want to devote to regular gardening activities?
- Want a good view? Need a landscape facelift?

Figure 26-C. A sample blob design



UF IFAS- Landscape Design: Ten Important Things to Consider

1. **Understand your site** for plant selection and activity location
2. **Remember the user** by considering what you want and need
3. **Use a form and/or style theme** to help determine shapes and organize spaces
4. **Create and link spaces** by designating activity areas and linking with elements
5. **Consider the function of plants** for both the environment and the user



Linked Spaces
Credit: Gail Hansen, UF/IFAS

UF IFAS- Landscape Design: Ten Important Things to Consider

6. **Structure the plantings** by using massing and layering techniques
7. **Highlight important points** such as transition areas and focal points
8. **Pay attention to detail** in the materials, the colors, and the surface textures
9. **Take time into account** for the growth and maintenance of plants
10. **Protect your resources** by using sustainable design practices



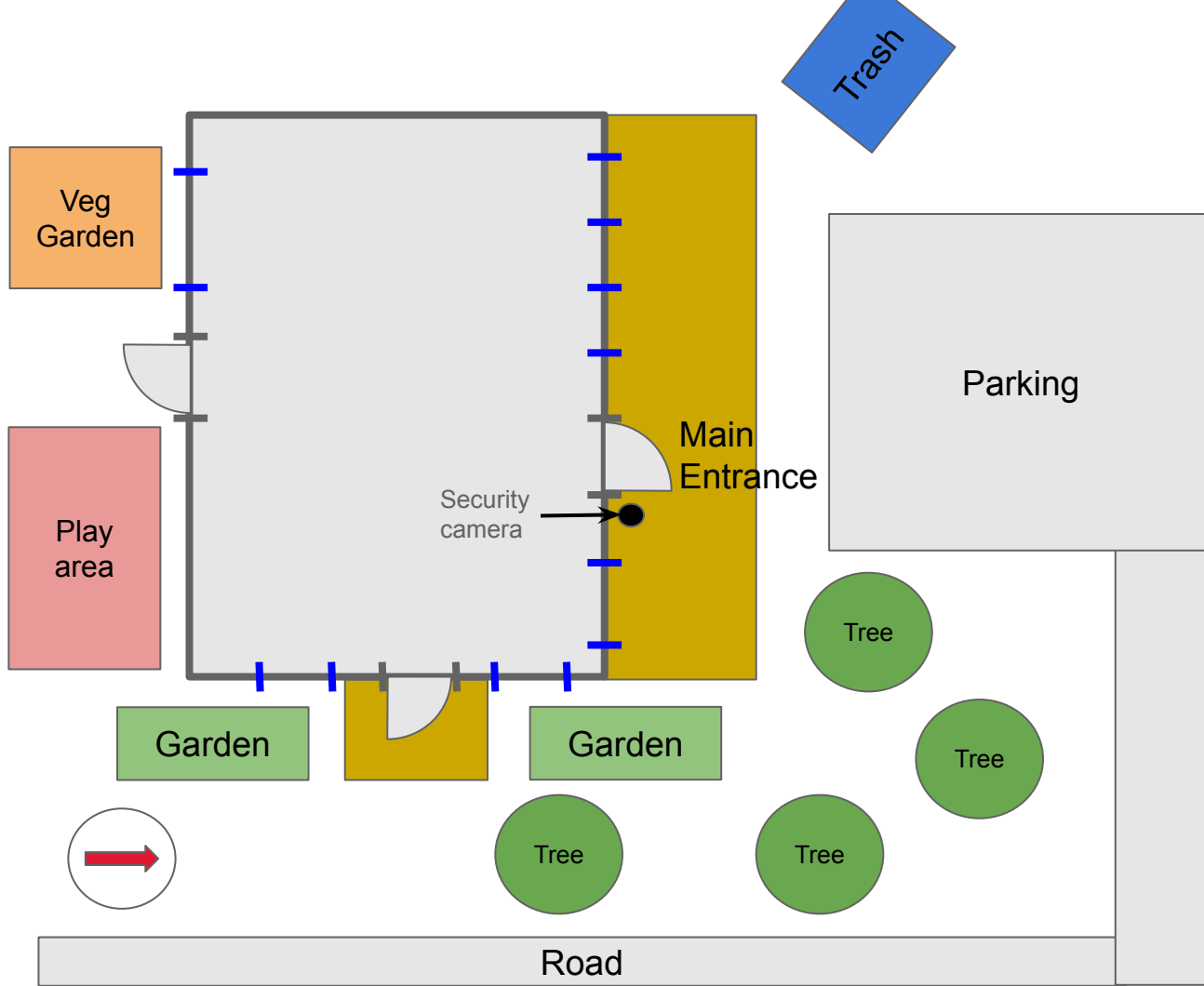


In 1971, criminologist C. Ray Jeffery, PhD, published a groundbreaking book titled *Crime Prevention Through Environmental Design*—introducing what we now know as CPTED. His theory was as visionary as it was practical: to prevent crime, we must design the total environment in ways that reduce the opportunities for it to occur.

*Image - Source: CO Dept of Criminal Justice, 2024
Information - NICP, 2025

Sight lines
Lighting
Minimize concealed routes
Entrapment Areas
Isolation
Land use mix
Activity generators
Ownership, maintenance, and management
Signs and information
Design





- Windows
- Doors
- Power
- Water
- Trees/shrubs



Design for...

- Energy Conservation



- Provide shade
- Windbreak, direct air movement

- Water Conservation



- Rain gardens, rain barrels
- Lawn size reduction
- Avoid watering impermeable surfaces
- Multi zone irrigation

- Wildlife Conservation

- Using natives attracts natives
- Plan for year-round food
- Food, water, shelter



Johnny N. Dell
Bugwood.org

- Food Security

- Use edible plants, like blueberry



- Minimize Maintenance

- Avoid sharp angles, narrow spaces, irregular edges
- Right plant right place



Plant Selection

- Right Plant Right Place
- Moisture
- Light exposure
- Insect and disease resistance
- Heat and wind tolerance
- Soil type preference



[Joseph OBrien, USDA Forest Service, Bugwood.org](#)



5546472

[David L. Clement, University of Maryland, Bugwood.org](#)



Maryland Living Landscapes Metric



1. Recycle organic yard and kitchen waste on-site
2. Capture and use precipitation where it falls
3. Plant and conserve a wide variety of native plants
4. Protect pollinators and beneficial insects
5. Reduce hazards to fish & wildlife
6. Shrink your lawn footprint
7. Protect our waterways and shorelines
8. Educate friends, family, and neighbors about MD Living Landscapes practices

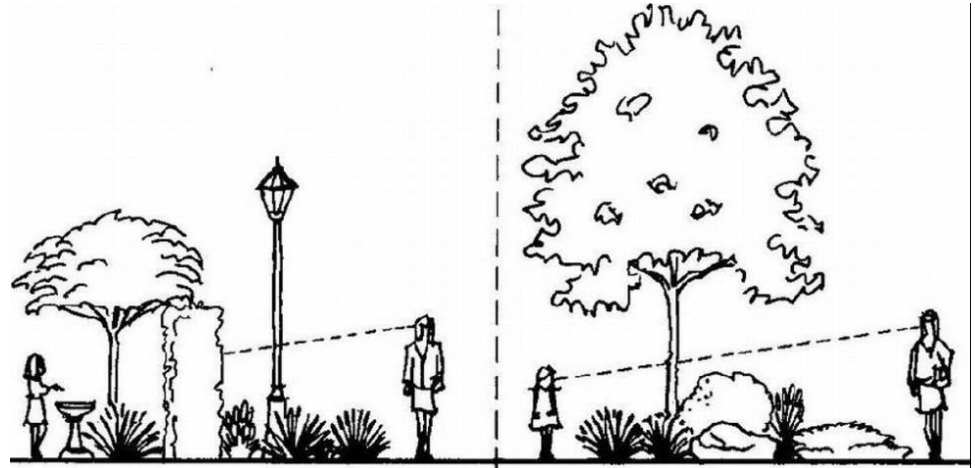


Barriers: Implied

Figure 26-E. Design with an implied enclosure



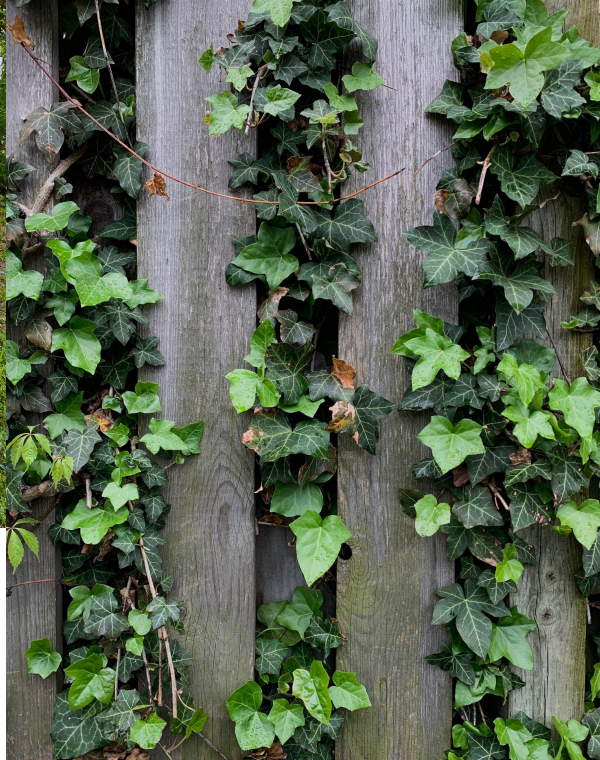
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Physical and implied barriers.
Credit: Gail Hansen, UF/IFAS



Barriers: Physical



Barriers:

Plants for privacy screens

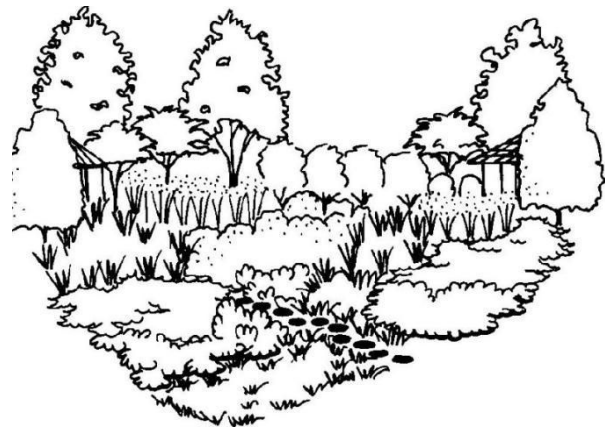
- Use variety, mix will be more resilient to drought, flood, pests, disease
- Native plants adapted to local conditions, less maintenance, supports wildlife



Credit: Clemson Co-Op Extension HGIC 1731 Mixed Screens



Credit: UME, Plants for Mixed Privacy Screens



Credit: Gail Hansen, UF/IFAS Vertical plant layers



Barriers:

Plants to avoid:

- Bamboo
- European privet
- Chinese silver grass
- Chinese wisteria
- Japanese barberry
- Burning Bush



[golden bamboo \(*Phyllostachys aurea*\)](#)

[Chuck Barger, University of Georgia, Bugwood.org](#)



[Japanese barberry \(*Berberis thunbergii* DC\)](#)

[Leslie J. Mehrhoff, University of Connecticut, Bugwood.org](#)

Barriers: Natives



[Karan A. Rawlins,](#)
[University of Georgia,](#)
[Bugwood.org](#)

[John Ruter, University of](#)
[Georgia, Bugwood.org](#)



Barriers: Non-Native



Patrick Breen, Oregon State University Landscape Plants



Foliage season



[John Ruter, University of Georgia, Bugwood.org](#)



[Karan A. Rawlins, University of Georgia, Bugwood.org](#)



[Susan Marquesen, Penn State Master Gardener](#)



Foliage season



[John Ruter, University of Georgia, Bugwood.org](#)



[Gardening with Native Grasses in Cold Climates](#) by Diane M. Narem and Mary Hockenberry Meyer



[Miri Talabac, UME Spicebush](#)



Leaf Shape



Juniper chinensis

[Rob Routledge, Sault College, Bugwood.org](http://RobRoutledge.SaultCollege.Bugwood.org)



Thuja occidentalis

[Rob Routledge, Sault College, Bugwood.org](http://RobRoutledge.SaultCollege.Bugwood.org)



Cephalotaxus harringtonia

Kathleen Moore



Thuja plicata

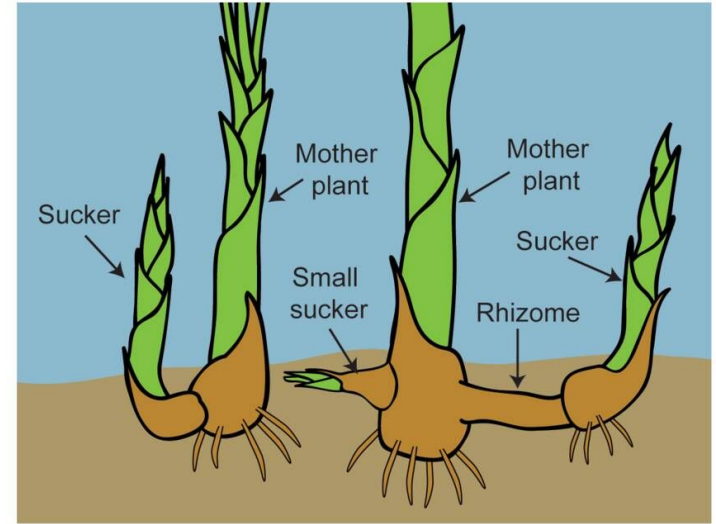
[Chris Evans, University of Illinois, Bugwood.org](http://ChrisEvans.UniversityofIllinois.Bugwood.org)

Ilex opaca (top), *Ilex glabra* (bottom)

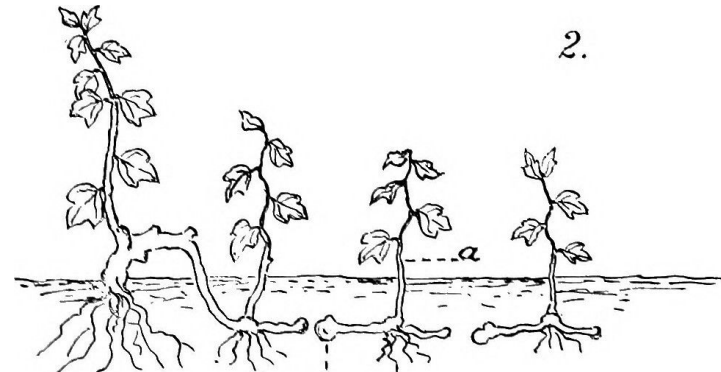
[Chris Evans, University of Illinois, Bugwood.org](http://ChrisEvans.UniversityofIllinois.Bugwood.org)

Plant Propagation

- Root suckers, rhizomes
- Seeds
- Plant division
- Cuttings (stem, leaf, bud, root)
- Layering



UF IFAS PropG Rhizomes



A manual of structural botany; an introductory textbook for

Pests and nuisance animals

Definition of a pest:

- an organism living and growing where they are not wanted
- can cause damage to plants, humans, structures, and other creatures



Howard F. Schwartz, Colorado State University, Bugwood.org



Elizabeth Bush, Virginia Polytechnic Institute and State University, Bugwood.org



Johnny N. Dell, Bugwood.org



Steven Katovich, Bugwood.org



Joseph Berger, Bugwood.org



Karla Salp, Washington State Department of Agriculture, Bugwood.org



Dr.Thirunarayanan Perumal , Banaras Hindu University, Bugwood.org

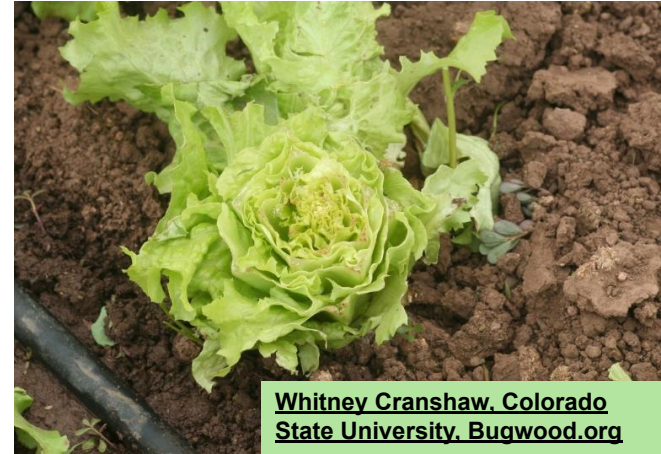
Vertebrate Pests: Deer

Damage

- Rough and torn appearance
- They pull up plants when feeding
- Do not have incisors
- Rub antlers on bark



"Skull Science" New York State Dept.
of Environmental Conservation



Whitney Cranshaw, Colorado
State University, Bugwood.org



Randy Cyr, Greentree,
Bugwood.org

Vertebrate Pests: Deer

Management

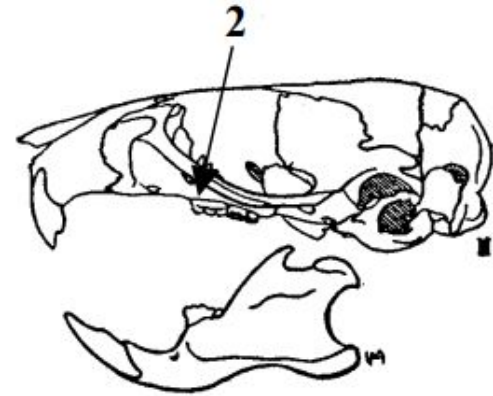
- Exclusion- most reliable
 - Fence minimum 8 feet high
 - Sturdy material, can crawl under plastic mesh
- Deer resistant plants
- Chemical- limited effectiveness
 - Fragrant soap
 - Pepper spray
 - FOLLOW THE LABEL



Vertebrate Pests: Voles

Damage

- Dig tunnels
- Incisors
- Eat plants and roots



Key to Rodent Skulls
UF/IFAS



David L. Clement, University of Maryland,
Bugwood.org



Mary Ann Hansen, Virginia Polytechnic
Institute and State University, Bugwood.org



Vertebrate Pests: Voles

Management

- Habitat modification
 - Create grass/weed free zones (15ft wide)
 - Remove food and cover
 - Reduce spillage from bird feeders
- Exclusion
 - Fence 12 inch high, 2-3 inches below ground, 1/4 inch mesh
 - Plastic cylinders protect trunks



Stephen M. Vantassel



Vertebrate Pests: Voles

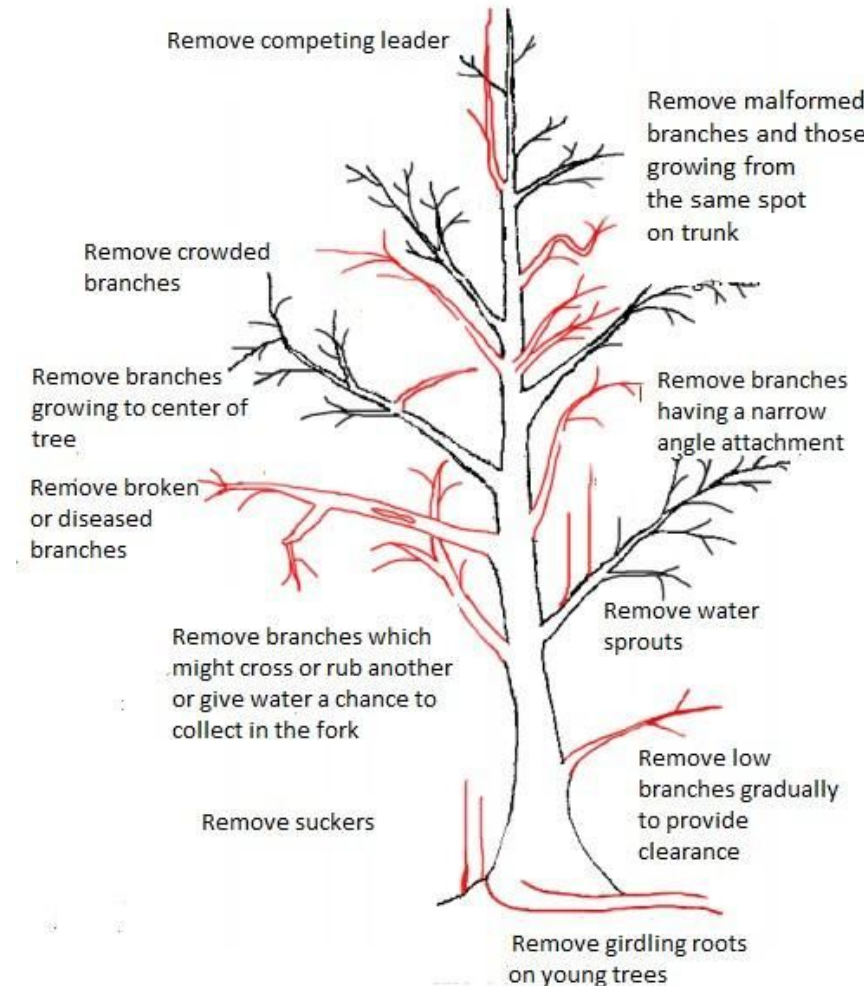
Management

- Repellents
 - Thiram and capsaicin, ornamental only
 - Coyote fox urine
 - Expensive, short term, may wash off
- Traps
 - Damage less than an acre
 - 2/3 per runaway/hole, place perpendicular
 - Snap traps, if baited cover with box reduce bird and squirrels



Pruning

- Safety
- Plant Health
- Improve flower and fruit quality
- Aesthetics
- Propagation



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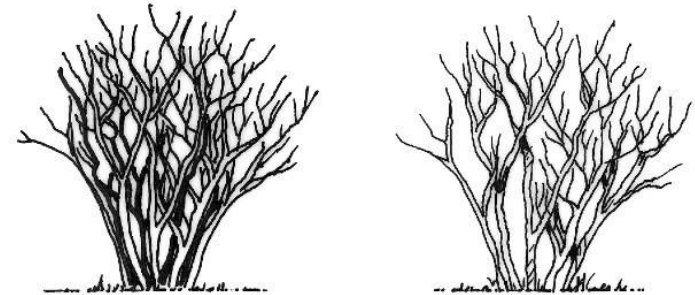
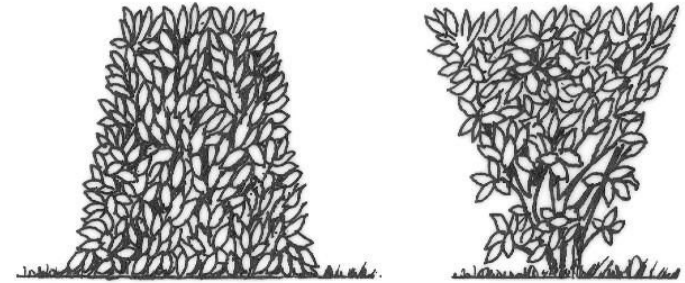
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Illustration of Reasons to Prune Trees (red branches are to be removed)

Credit: Don Wittig, former UME Master Gardener

Pruning

- Dead, damaged, or hazard branches removed at any time
- Blooming on old wood vs new wood
- Bloom before July 1 pruned after flowering
- Bloom after July 1 pruned at end of winter/early spring



Credit: UME, Pruning Shrubs and Hedges in the Home Garden



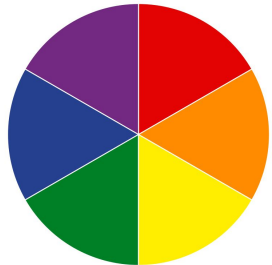
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Elements of Design

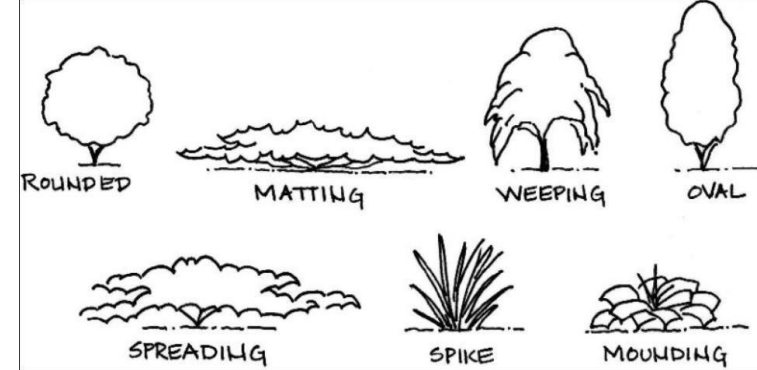
- Mass – how much space occupied or vacant
- Form – 3-D space shape
- Lines
- Texture – fine, coarse, visual, tangible
- Color



- Warm, cool
- Complementary, analogous
- Monochromatic, polychromatic



Richard Gardner, Bugwood.org



Plant forms.
Credit: Gail Hansen, UF/IFAS

Figure 26-H. Formal/straight lines



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Composition

- Scale
- Balance
- Repetition
- Unique character
- Less is more

Figure 26-J. Symmetrical balance vs. asymmetrical



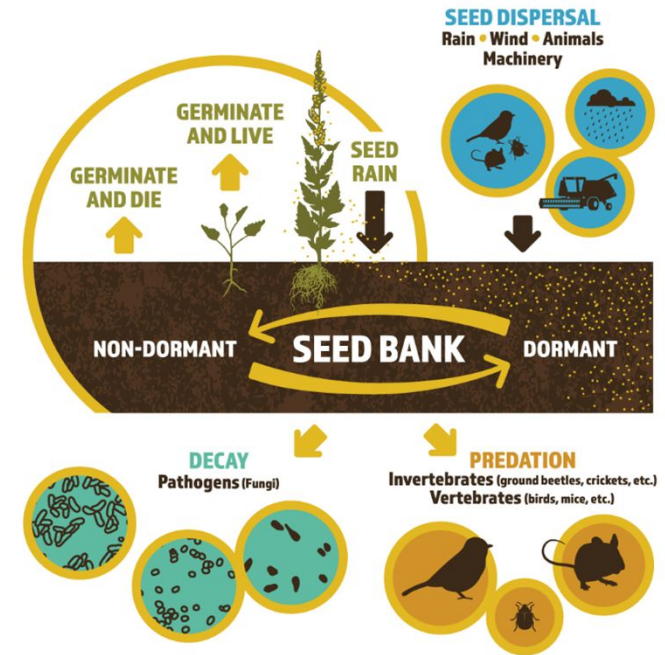
DIY or Hire Professional?

- DIY can save money if you already have tools and materials
- Hire contractors for tasks that require special equipment and permits.
- Research the professional:
 - Have appropriate license/certifications?
 - See previous work?
 - Will they provide you with a maintenance guide so you can take care of your own landscape?
 - Do they offer a guarantee on their installation?



Plant Monitoring and Establishment

- newly-planted plants may need more water in the beginning check regularly
- buried seeds unearthed and germinate during the planting process, remove weeds, remove competition
- new pests or diseases monitor to detect early as possible.



Resources

- Clemson Cooperative Extension HGIC: [Mixed Screens](#)
- Illinois Extension: [Caring for Vines](#)
- [NC State Extension Gardener Handbook](#) Chapter 19
- UFIFAS: [Landscape Design: 10 Important Things to Consider](#)
- UME: [Plants for Mixed Privacy Screens](#)
- [Gardening with Native Plants in Cold Climates](#) Chapter 4.2
Maintenance
- Virginia Cooperative Extension: [Propagation by Cuttings, Layer, and Division](#)

