

# Understanding Hurdles to Better Site Designs

## *What May Bungle the Building of Better Buildings*

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# Understanding Hurdles to Better Site Designs

- October 8: *Addressing Fire Dept. and Public Safety Concerns*
- October 29: *Strips, Swales, Sod and Stormwater-- Drainage to Landscaping*
- November 12: *Understanding What May Bungle the Building of Better Buildings*
- December 10: *Better Parking Designs—What's the Stall? and Assessing the Accessibility of Streets and Sidewalks*
- January 29: *Workshop—Overcoming Hurdles*

# Desired Results of Meetings

- 🔥 Discuss Potential Conflicts
- 🔥 Define Underlying Issues to Those Conflicts
- 🔥 Brainstorm Potential Solutions
- 🔥 Determine Stakeholders to be Involved in Local Level Decisions

# Origin of Meetings



- Development Policies Comparison Project (April 2003)
- SCVURPPP Stormwater Permit Provision C.3.j.
  - Review local design standards/guidance for opportunities to reduce water quality impacts
  - Submit review analysis (Sept. 15, 2003)
  - Incorporate/implement revised standards and guidance (Sept. 15, 2004)
  - Requires public process for input/review

# What are Site Design Measures?

Various practices/features to:

- 🔥 Reduce total impervious (paved) areas;
- 🔥 Reduce velocity of, detain, store, diffuse, infiltrate stormwater
- 🔥 Conserve natural areas
  - minimize land disturbance
  - preserve high quality open space

# Today's Agenda

- 🔥 Reducing the Building Footprint
- 🔥 Green Roofs
- 🔥 Using Benign Building Materials
- 🔥 Disconnecting Roof Downspouts from Storm Drains

# Reducing the Building Footprint



# Green Roofs

## Parking Garage, Oakland, CA



## Gap World Headquarters, San Bruno, CA



courtesy:  
CDM

# Using Benign Building Materials

- Roofing— Slate, Steel, Stone, Terra Cotta Tiles rather than
  - copper sheeting (trace metals)
  - asphalt shingles (by-product of oil-refining process)
  - zinc (trace metals, lead used in zincing process)
- Concrete—Avoid petroleum-based oil or diesel fuel form separators

# Using Benign Building Materials

- **Wood—Avoid pressure treated woods (creosote or penta wood preservative).**
  - Consider Recycled plastics, steel studs, & frames
- **Paints—Test for Lead for Older Buildings**

# Disconnected Roof Gutters

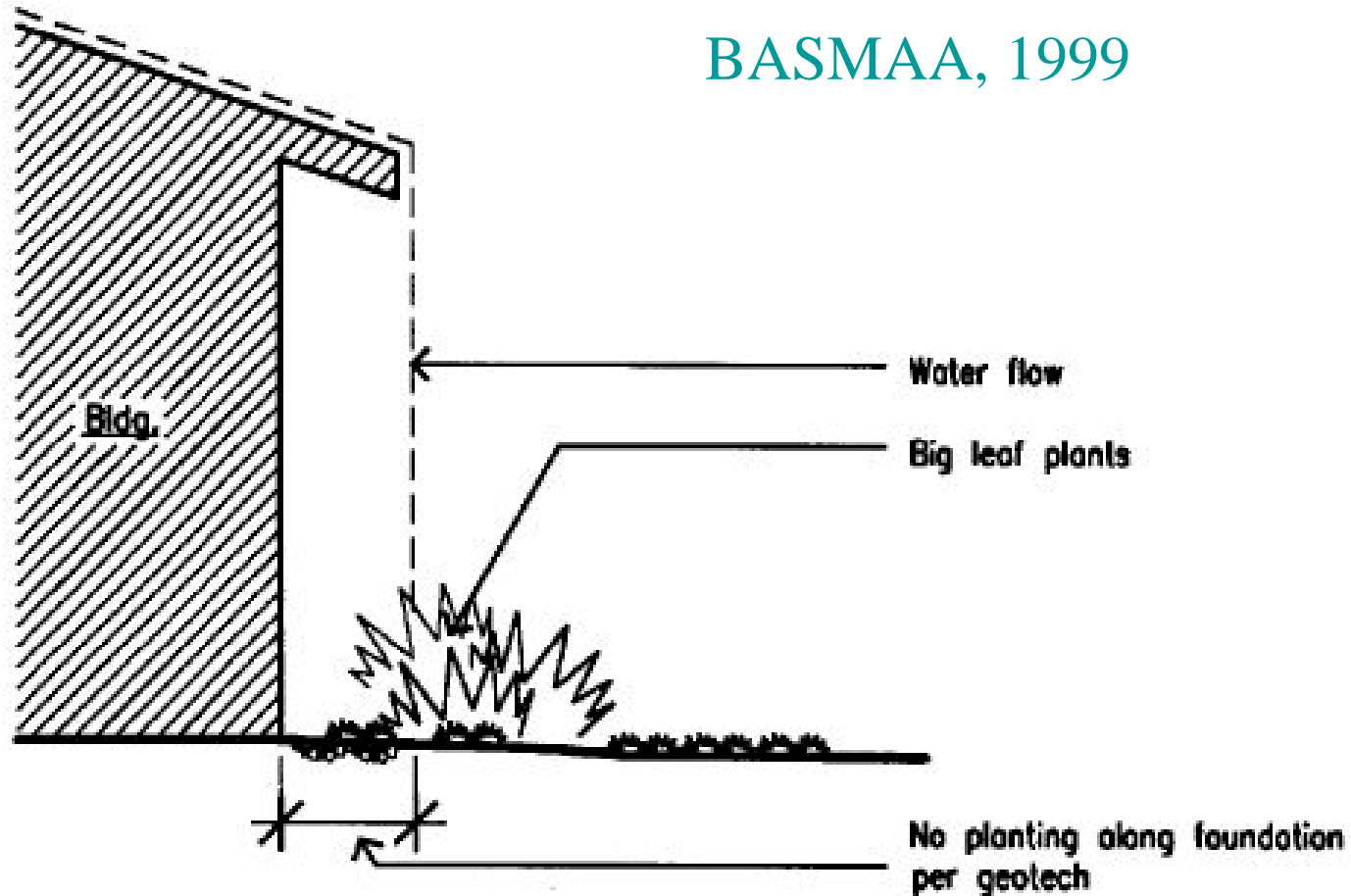


SCVWD

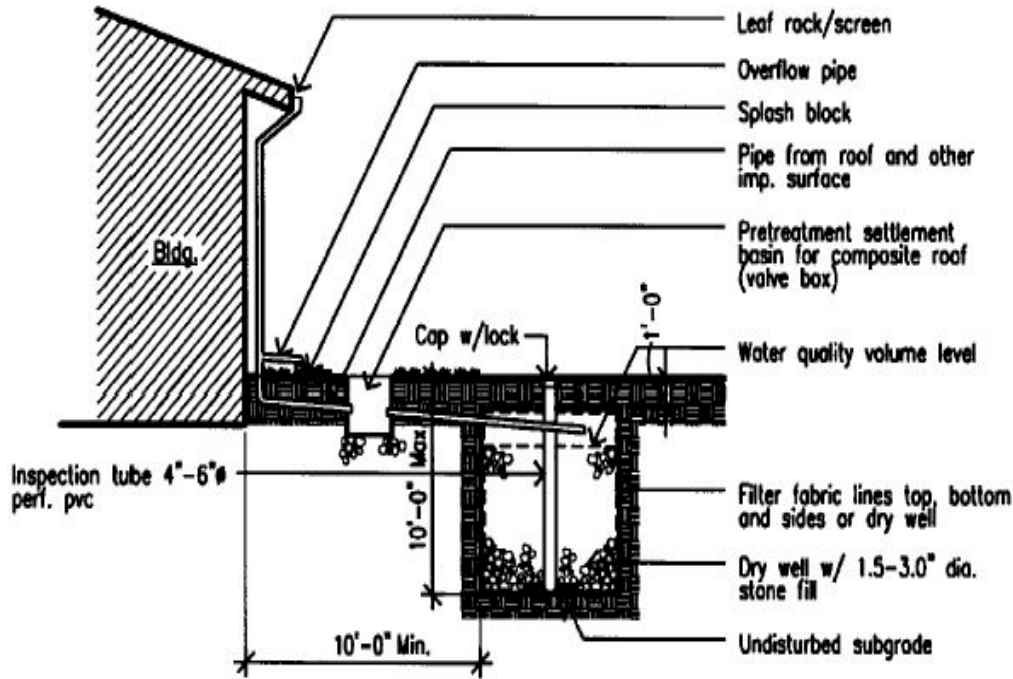


# Foundation Planting

BASMAA, 1999



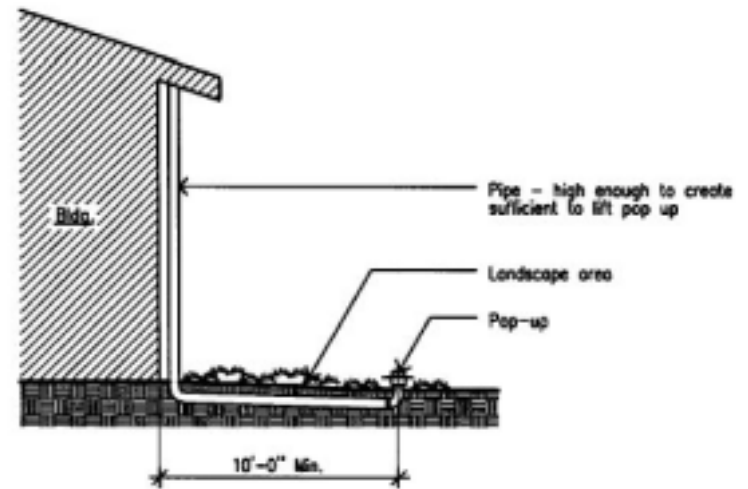
# Roof Options



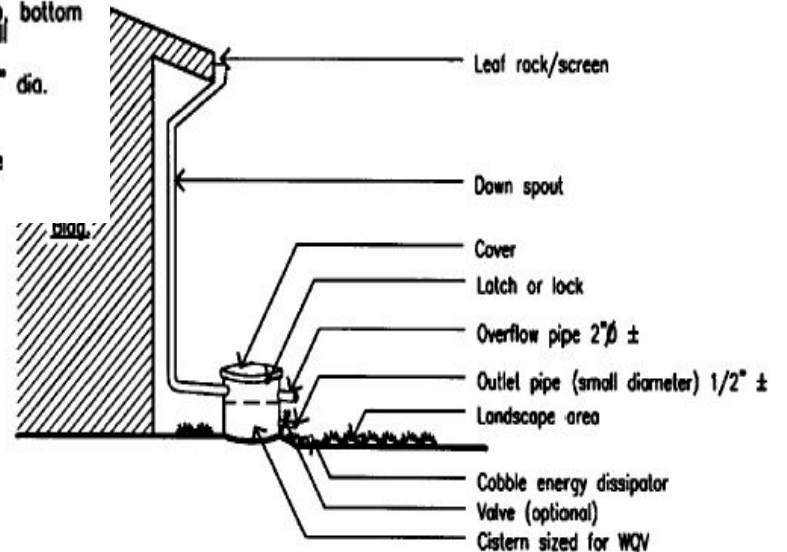
Dry Well

Cistern

BASMAA, 1999



Pop-up Emitter



# Guidance on Site Design Techniques

- 🔥 BASMAA's *Start at the Source*, 1999
  - 💧 Under “new” at [www.scvurppp.org](http://www.scvurppp.org)
- 🔥 California Stormwater BMP Handbooks, 2003  
New Development and Redevelopment
  - 💧 [www.cabmphandbooks.com](http://www.cabmphandbooks.com)
- 🔥 Center for Watershed Protection
  - 💧 [www.cwp.org](http://www.cwp.org)

Questions?



# Reducing the Building Footprint

- Can mixed use/smart growth/water quality protection co-exist with city character and neighborhood aesthetics?
- Will residents move into high density housing or just leave the area? What are the housing demands/needs in the South Bay?

# Reducing the Building Footprint

- Does using the entire site for infill development help stormwater quality?
- What are the equity issues with protecting open space elsewhere?

# Reducing the Building Footprint

- What incentives are available to reduce impervious surface reduction?
- Do they work?
- What hurdles has Menlo Park and Richmond faced in implementing their incentive programs?
- How have they overcome them?

# Green Roofs

- How do green roofs work?
- What needs to be incorporated into green roofs for them to be useful from a water quality perspective?

# Green Roofs

- Why are we not seeing more green roofs in California?
- How can we assign value to the externality benefits?
- Can retrofit projects incorporate green roofs? What are the structural hurdles?

# Green Roofs

- Should green roofs be used in earthquake-prone areas? What precautions should be taken?
- Should green roofs be used in area with high fire danger? What precautions should be taken?

# Green Roofs

- Would green roofs be covered by Menlo Park's and Richmond's incentive programs?
- What soils and vegetation requirements would you recommend for green roofs in the Santa Clara valley/Bay Area?
- What operation and maintenance would you recommend?

# Using Benign Building Materials

- How does Richmond's Green Building Incentive Program work?
- Has Richmond experience any challenges/hurdles to implementing it Green Building Program?

# Roofing Materials

- What are the benefits and drawbacks to copper and asphalt roofs?
- Are there satisfactory alternatives?

# Concrete Form Separators

- Why do concrete form separators use diesel fuel or petroleum-based oil? Are there any solutions for non-toxic form separators that plaster and stucco can adhere to?

# Wood

- Why are pressure treated woods used?
- Are there less-toxic alternatives to RxR ties and woods pressure treated with creosote or penta wood preservative?
- Are there drawbacks to using recycled plastics, steel studs/frames?

# Lead in Paint

- How should we improve education outreach regarding lead paint?
- How can an area be cleaned if sanding or water blasting was already used on lead paint

# Disconnecting Roof Downspouts

- Will roof downspouts placed close to building result in damage to the building?
- How far must downspouts be to ensure protection of building?
- Are mushy lawns a problem?

# Dry Wells

- What agreements have SCVURPPP and the District come to with respect to placement of dry wells?
- How far from buildings should dry wells be sited to protect foundation?

# Dry Wells

- How large would dry well need to be to allow proper infiltration if used with clay soils?
- Can an underdrain be used effectively with dry wells?

# Cisterns

- How do we prevent mosquito breeding in cisterns?
- Can cisterns be a hazard to small children (drowning)? How prevent?
- Are there other alternatives to reduce maintenance requirements –preventing clogging?

# Foundation Planting

- What plants may tolerate heavy runoff and inundation and be suitable for foundation planting?
- What protection is needed to prevent damage to building from water?
- What solutions are available that would allow for foundation planting to be successful and protect foundations?

# Pop-up Drainage Emitters

- Would there be a potential for clogging with asphalt shingle “sediment”?
- Are these being used? Why?