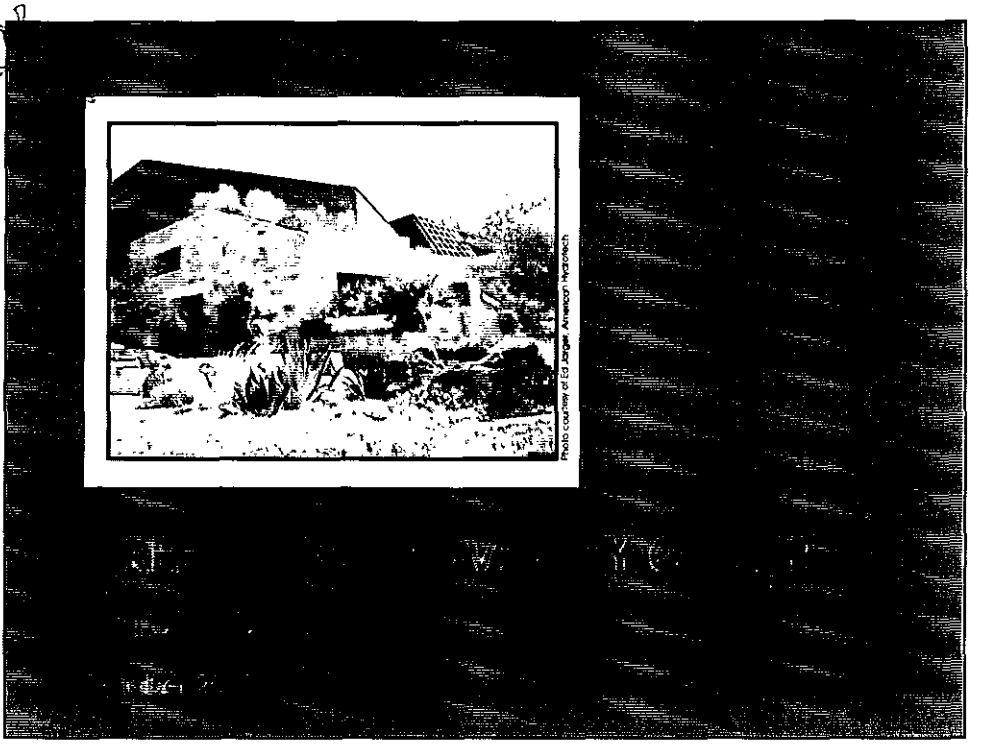
Late Bac



Council Resolution

RESOLUTION NO. 20090827-057

WHEREAS, green roofs, as a component of green infrastructure, can conserve energy, mitigate stormwater runoff volume, provide wildlife habitat, and reduce the urban heat island effect; **NOW, THEREFORE,**

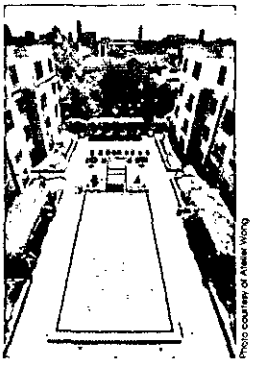
BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF AUSTIN:

The City Manager is directed to convene and work with a green roofs stakeholder group to explore the feasibility of offering energy and stormwater credits and other incentives, based on performance, to encourage the creation of green roofs in the City.

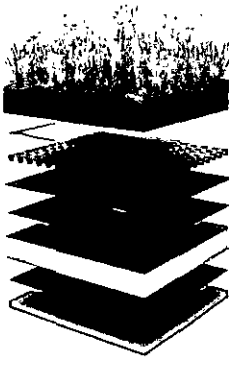
Charge and process

Late Bac

Green Roof Types



AMENITY DECK
Sterling House



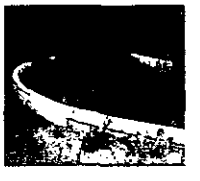
GREEN ROOF
Diagram

RESIDENTIAL TERRACE
Hill Country Residence

Case for Green Roofs

Public Benefits

- Urban Heat Island Mitigation
- Stormwater Detention
- Air Quality
- Carbon Dioxide Impact
- Water Quality
- Well-being
- Wildlife Habitat



Case for Green Roofs

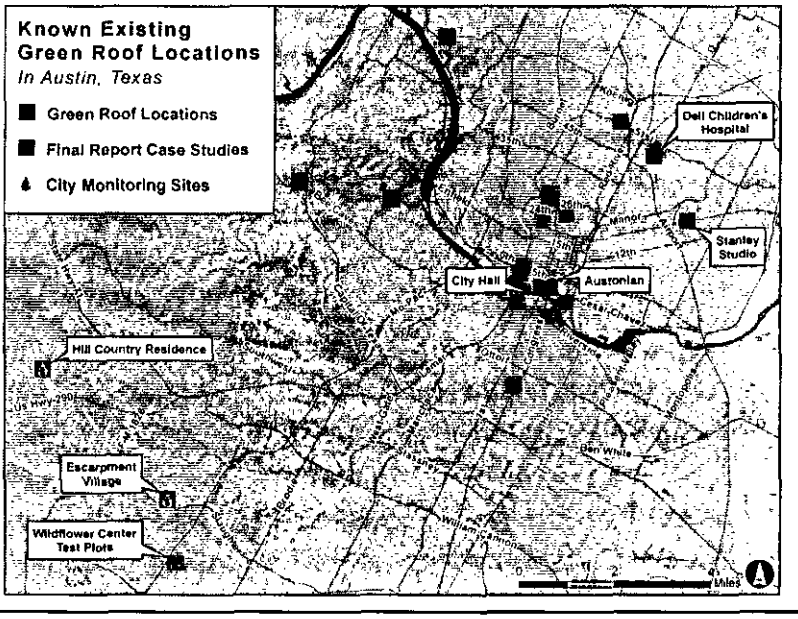
Case for Green Roofs

Private Benefits

- Energy Use
- Open Space
- Uses and Activities
- Real Estate Value
- Extended Roof Life
- Sound Attenuation

Case Studies

Green Roof Locations



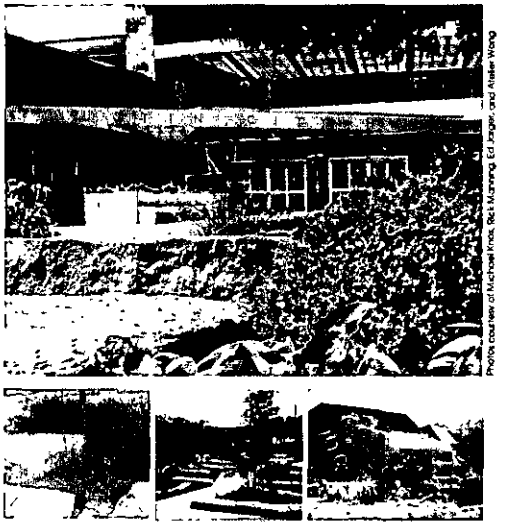
Austin City Hall

Location:
Downtown Austin

Project Type:
Institutional

Year Installed:
2005

Green Roof Area:
13,625 sq. ft.



Photos courtesy of Michael Knox, Rick Mcanning, Ed Jaggers, and Atelier Wong

Case Studies

Hill Country Residence

Location:
Southwest Austin

Project Type:
Residence

Year Installed:
2005

Green Roof Area:
1,125 sq. ft.

Photos courtesy of Kathy Zarsky

Case Studies

Accomplishments

- Reviewed international incentives and credits
- Established an Austin green roof database
- Documented existing City policies and incentives
- Analyzed potential policies and incentives
- Developed Five-Year Policy Implementation Plan

Advisory Group Efforts

Accomplishments

- Advocated for green roofs in the Downtown Density Bonus Plan
- Supported the creation a City green roof website
- Developed a proposal for monitoring research
- Advocated for Austin Energy rebate increase

Advisory Group Efforts

Accomplishments

- Initiated design and performance considerations
- Organized a seminar on water retention modeling
- Provided an outreach seminar to solicit feedback
- Integrated *Water Conservation 2020* principles
- Developed Interim and Final Reports

Advisory Group Efforts

Green Roof Policy Development

Phase 1: Introduction and Awareness

Phase 2: Community Engagement

Phase 3: Action Plan Development and Implementation

Phase 4: Technical Research

Phase 5: Program and Policy Development

Phase 6: Continuous Improvement

Source – Green Roofs: A Resource Manual for Municipal Policy Makers

Key Findings and Conclusions

Incentives and Credits

- Zoning
- Energy Conservation, Air Quality, and Climate Protection
- Watershed Protection
- Financial Incentives

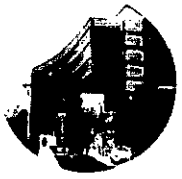
Note: Green roofs will be subject to design and performance considerations in order to receive incentives and credits

Key Findings and Conclusions

Zoning

Existing

- Green roofs for Planned Unit Developments (PUD)
  - Open Space, Green Building, Landscaping, Tier 2 Option
- Green roofs as open space for multifamily and commercial projects
- Green roofs over subsurface parking garages
- Green roof parks

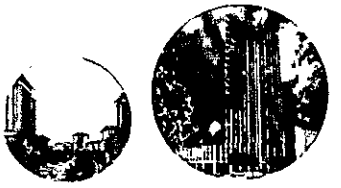


Incentives and Credits

Zoning

Potential

- Downtown Density Bonus
- Other density bonus options (e.g., North Burnet-Gateway)
- Increased building cover credit
- Green roofs on all new Central Business District buildings



Incentives and Credits

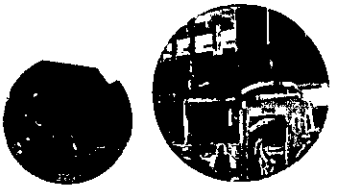
Energy Conservation, Air Quality, & Climate Protection

Existing

- Green roofs equivalent to cool roofs

Potential

- Air Quality, Climate Protection, and Urban Heat Island Mitigation Program rebates
- Austin Energy rebates



Incentives and Credits

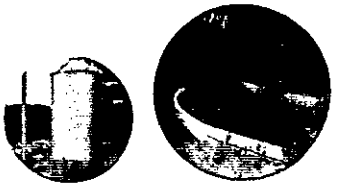
Watershed Protection

Existing

- Green roofs for flood control
- Existing green roof options for water quality

Potential

- Less runoff allowing smaller water quality controls
- Water quality control research needed
- Not ready to count as "pervious" cover



Incentives and Credits

Financial Incentives

Portland

- Bonus floor area ratio (FAR) for green roofs in central city

Chicago

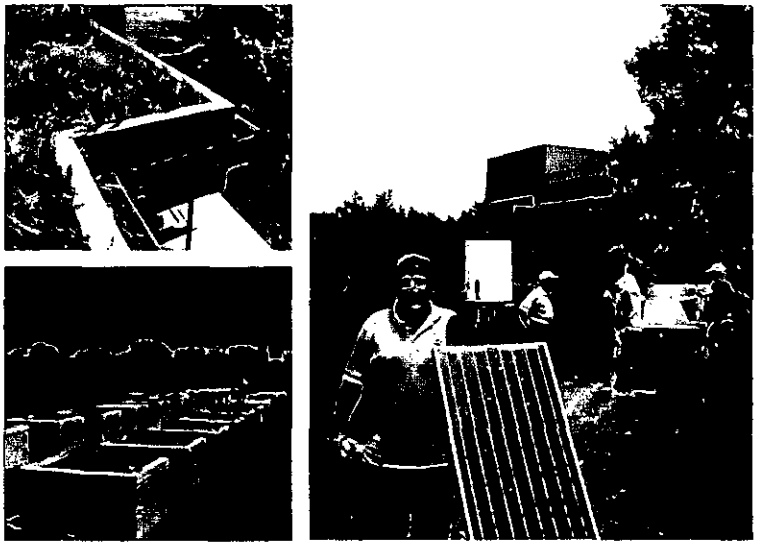
- Up to $5000 to residential and small commercial projects

Toronto

- Incentive of $50 per square meter, up to a maximum of $100,000

Incentives and Credits

Research and Monitoring



Key Findings and Conclusions

Design and Performance Considerations

- Size
- Soil Depth and Mulch
- Plant Cover and Variety
- Water Use
- Drainage
- Integrated Pest Management (IPM)
- Visibility and Access
- Maintenance Requirements

Note: Continued development in future phases of work

Key Findings and Conclusions

Water Conservation and Green Roofs

Photo courtesy of Mariano Mata, UT

Stanley Studio

Rainwater Catchment for Irrigation

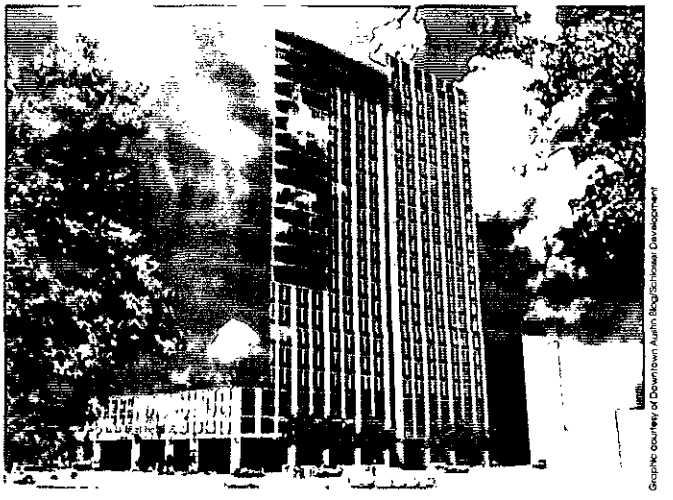
Photo courtesy of Thomas McConnell

The Austonian

HVAC Condensation for Irrigation

Key Findings and Conclusions

Green Roof Density Bonus



Graphic courtesy of Downtown Austin Blog/Schlosser Development

Shoal Creek Walk – At least 20,000 sq. ft. of green roof shall be provided

Key Findings and Conclusions

Green Roofs on City Buildings

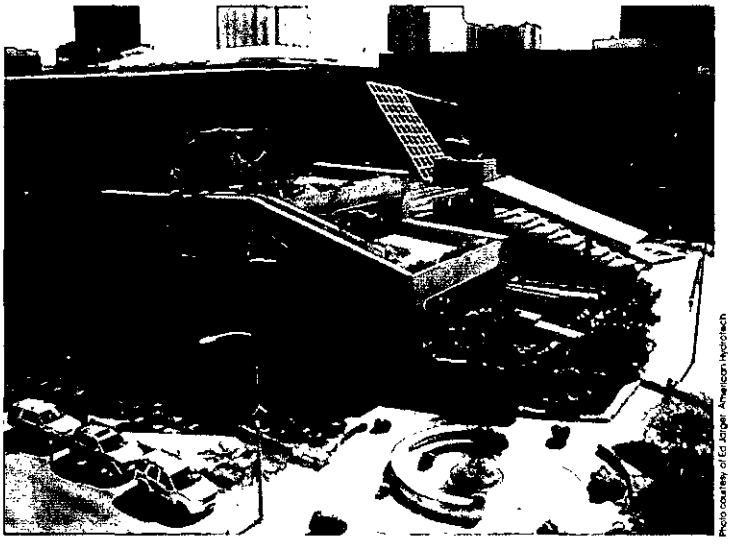


Photo courtesy of Ed Jorgel, American Hydrotech

Key Findings and Conclusions

Outreach and Education

- City of Austin Urban Heat Island Mitigation Program will create a green roof educational campaign, including:
  - Website
  - Brochure
  - Presentations

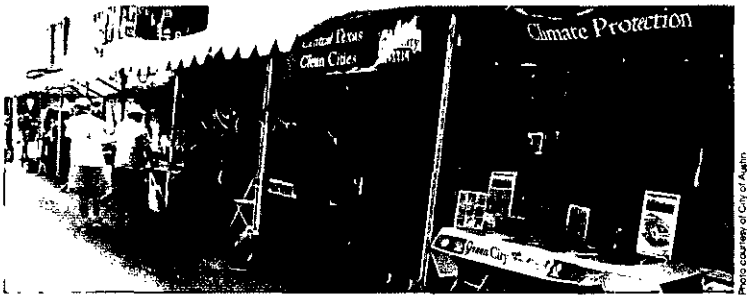


Photo courtesy of City of Austin

Key Findings and Conclusions

Five-Year Policy Implementation Plan

Short Term

- Multi-departmental coordination
- Downtown density bonus
- Performance standards development
- Raise importance of green roofs for PUDs
- Initiate building cover ordinance
- Support incorporation in City building projects
- Support of education/website work

Next Steps

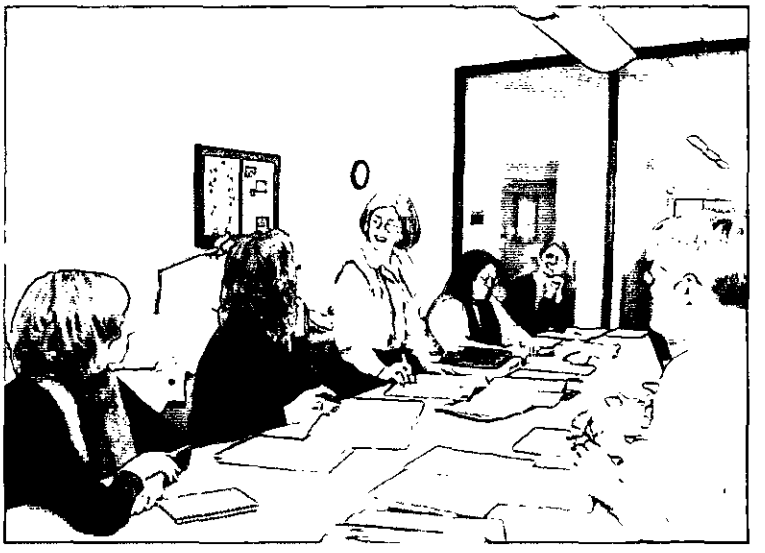
Five-Year Policy Implementation Plan

Mid to Long Term

- Density bonuses for targeted areas
  - North Burnet/Gateway, Airport Boulevard, East Riverside Corridor, Transit-Oriented Developments (TODs)
- Continue financial support of watershed studies
- Explore financial incentives

Next Steps

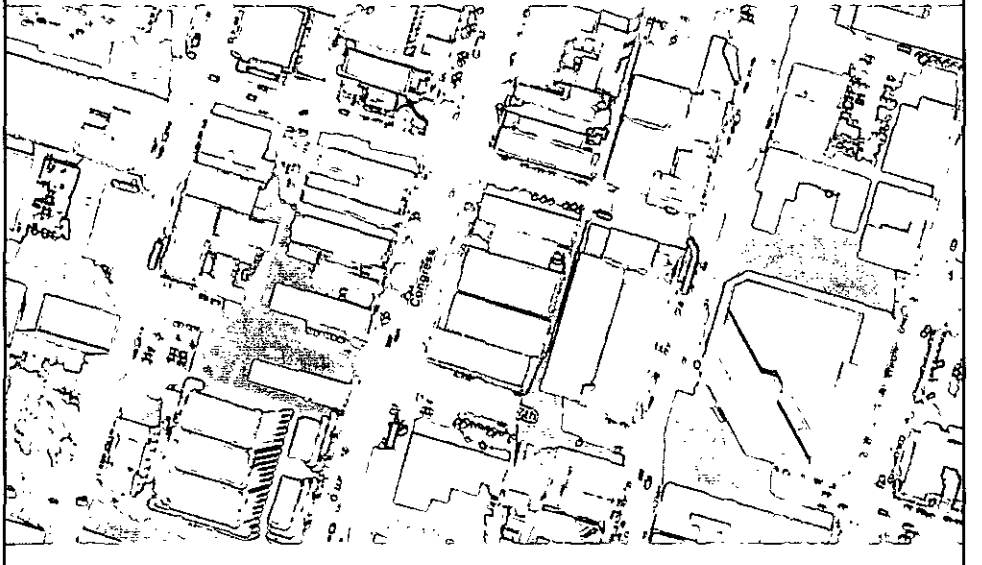
Request for GRAG Extension



Next Steps

QUESTIONS

http://www.ci.austin.tx.us/council/place1



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