ARTICLE (www.planning.org/divisions/urbandesign/newsletter/2011/kot.pdf)

Food Distribution Policy & Design Solutions
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Abraham Lincoln is credited with saying, "…*the most valuable of all arts will be the art of deriving a comfortable subsistence from the smallest area of soil. No community whose every member possesses this art can ever be the victim of oppression in any of its forms."* The quote speaks to the basic human needs of water, food and shelter; and, perhaps most importantly, the psychological need to have some control of meeting our needs. Yet, in urban environments—seemingly at every level—obstacles exist that limit one's ability to produce food. These challenges range from general plans, to management issues, to toxic soils; with existing buildings and infrastructure especially difficult to manage.

However, there are policy and design solutions that can make the implementation of distributed food production more likely. The following table is meant to highlight a few issues, of various scales, that impact the integration of distributed food production in an existing urban environment. It is not comprehensive by any means, but perhaps it can inspire a deeper understanding on the obstacles to implementing food production.

Table 1. Policies, Opportunities, & Successful Examples of Local Food Planning Strategies

Policy Issue	Opportunity	Successful Example
1. Defining Space: Urban design guidelines often have a limited definition of open space that does not consider food production, nor access to local sources of food.	Create opportunity for open space allocation in zoning requirements to address the relative value of food production at the housing unit, building and neighborhood scales. Open Space and Park plan elements should consider access to personal food production.	The City & County of San Francisco October 1996 Sustainability Plan encouraged the planting of a fruit tree in every yard.[i] Including food production as part of the developed area reduces pressure on the impact of development in displacing farmland. Additional policy recommendations are included in the National Policy & Legal Analysis Network to Prevent Childhood Obesity (NPLAN) document.[ii]
2. City Service: City services do not include resources to encourage urban agriculture.	Composting service and graywater infrastructure improves the likelihood of building and site food production. Productive landscapes may be delineated as either private or public realm, but will have different controls and enforcement (area plans vs. zoning vs. building codes).	Alameda County (CA) provides curbside composting for food scraps since 2006. The program has had significant impact in reducing food waste at the landfill and resulted in compost for local farmers and community gardens.[iii]
3. Public Space: Managing public access to productive landscapes.	As a public resource, urban food production in the public realm must be managed. Management issues may include perceptions of increased liability, increase in pest management cost, pesticide regulation and enforcement, composting service, irrigation infrastructure, soil testing, and others.	The City of Freiburg, Germany has implemented a successful program of public/private controls in the management of their extensive system of community gardens. The City maintains ownership and Garden Clubs pay rent to manage the resource.[iv] A list of ordinance and policy tools can be found at the American Community Gardening Association website.[v]
4. Building Design (New and Renovation): Agricultural production on green roofs requires active access to the roof and other infrastructure to make food production possible.	Extending a managed access point to the roof of buildings is essential to encourage agricultural production on a roof. Access to water for irrigation in Mediterranean and desert climates will be essential for permanent irrigation. The environmental conditions must be understood to account for often full sun (warmer soils) and greater wind exposure at rooftops.	The City of Vancouver now requires multifamily housing to include "edible landscaping" and productive food garden spaces for rooftops and balconies. An early project to include agricultural production was Freesia (2006), a 19-story residential high-rise in downtown incorporate garden plots for residents. The 60 wood-framed raised planter beds are located on the seventh-floor mezzanine rooftop, along with a tool shed and garden lockers.[vi]
5. Building Design (New and Renovation): Rooftop gardening is perceived to be more expensive without appropriate value to encourage implementation.	Food production could occur in raised planters on the roof, which makes it possible to have food production with little upfront investment in new or existing. Associated benefits of green roofs have been well documented for stormwater runoff quality and quantity, urban temperature moderation, and air quality. Undertaking major renovations in projects can trigger structural analysis and retrofit, please confirm with your local jurisdictions for requirements.	The Bartol Intergenerational Garden at the On Lok Senior Center in San Francisco, California. The original garden was planted on an empty lot. When the lot was developed with an eight-story building, the garden was relocated to the roof of the new building.[vii]

ABOUT THE AUTHOR

Doug Kot, AIA, AICP, LEED AP, is an architect and planner with more than 14 years' experience with green building and environmentally sustainable planning projects. His experience includes all phases and scales of project development—from writing general plans through building detailing; and from conceptual design through post-occupancy evaluation.

His master planning and architectural designs have been awarded the American Institute of Architects, Committee on the Environment (AIA COTE) Top Ten award—most recently in 2007. He has been a technical consultant for dozens of high-performance buildings advising on ventilation strategies, energy efficiency measures, on-site renewable energy generation, water efficiency and healthy interiors.

He has taught extensively on building energy use, ecological urban design, and sustainable building technologies at UC Berkeley, the Boston Architectural College, and the Design Institute of San Diego.

He is an advisor to the UCSD Extension Sustainable Business Practice Certificate Program and the San Diego Zoo Biomimicry Conference.

ENDNOTES

[i] City & County of San Francisco – SFEnvironment, Sustainability Plan for San Francisco, October 1996. http://www.sfenvironment.org/downloads/library/sustainabilityplan.pdf.
[ii] National Policy & Legal Analysis Network to Prevent Childhood Obesity. http://www.nplanonline.org/nplan.
[iii] StopWaste.org: Reducing the Waste Stream for Alameda County, Recycling Wizard Search Results - Organic Materials. http://stopwaste.org.
[iv] Beatley, Timothy. *Green Urbanism: Learning from European Cities*. (Washington, D.C.: Island Press, 2000) 399.
[v] American Community Gardening Association – http://www.communitygarden.org.
[vi] Freesia Building + Amenities, garden + terrace. http://www.freesialiving.com/terrace.html.
[vii] Ableman, Michael. *Agriculture's Next Frontier: How Urban Farms Could Feed the World*. http://www.fieldsofplenty.com/writings/frontier.php.