



Green Roofs

Effective Learning Aid – Review and Reference Document - July 2017

This document serves as a basis for learning about green roofs, by presenting a basic survey, and providing links to key practitioners in this field and notable case studies in Israel and around the world. Moreover, readers are referred to articles, websites, and abstracts by various regulatory bodies, academic institutions, and research institutes, contracting companies, and magazines, as well as various organizations promoting green roofs. Each of these organizations deals with different material aspects of green roofing, including a review of a large portion of the theoretical material available in Hebrew and documentation of Israeli case studies.

Hubitus, the Jerusalem Botanical Garden hub for urban sustainability, is proud to develop information and make it accessible to practitioners, policy-setters, entrepreneurs, planners, and activists. This document is a preliminary draft and a starting point for individual study, based on the Hub's concept of knowledge pooling and sharing. We welcome any feedback, additions, comments, or notes to enrich any future versions of this document, and to establish a database on the Hub's online knowledge platform, which is due to come online by the end of 2017.

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1. Useful links - benefits and general information

NASA's green roofs research - Brief overview of NASA's roof research mentions other urban researches (P. 6).

International Green Roofs Association - A multi-national, non-profit organization of national green roofs associations and research institutes. IGRA mainly serves as a platform for communication and knowledge gathering for local or national associations. The association is an infrastructure for independent "pro Green Roof" lobby work with political decision makers and investors, as well as information access and networking.

Green Roofs For Healthy Cities - Is a non-profit industry association working to grow the green roof and wall industry throughout North America. The website contains accessible information about green roofs and walls; about the association's activity and comparative surveys and tools, especially for the US.

EFB - European Federation of Green Roof Associations - A federation which unites 16 European national associations and actively promotes the use of green roofs and green facades throughout Europe.

....Useful links - benefits and general information

Living roofs UK - Website containing important information and up to date news and trends in UK and globally.

Living Architecture Monitor - A magazine with quarterly publication, written by green roof and wall industry professionals, scholars and passionate advocates throughout North America. from the Green Infrastructure Foundation (<https://greeninfrastructurefoundation.org>)

Cool Roof ToolKit-Global Cool Cities Alliance approach (<https://www.globalcoolcities.org/about-us/our-approach>), The alliance reviews and compares roof and city cooling possibilities in order to fight global warming. The kit highlights local potential assessment tools and various case studies (P. 40 and forth recommended).

Green Roofs Cooling Los Angeles- From the city of Los Angeles's Environmental Affairs Department. A comprehensive study covering most aspects of establishing green roofs in Mediterranean climates. Includes valuable technical information and links to other resources.

Green roofs toolkit - DC's District Department of Energy & Environment - a good example of a brief about different aspects to consider when starting a green roof initiative. DC and North America's case.

RCI- Grow Green Sales- Understanding Owners Motivation - a global association of building envelope consultants demonstrating the owner's perspective in the decision-making process for implementing roofing services and systems, including green roofs and environmentally sustainable roofing systems.

The Kdas Green Roofs Ecology Center, University of Haifa - Israeli institute, links to previous Israeli convention programs and speakers(2015), local information publications and documentation of the large green/solar panel roof at Haifa University.

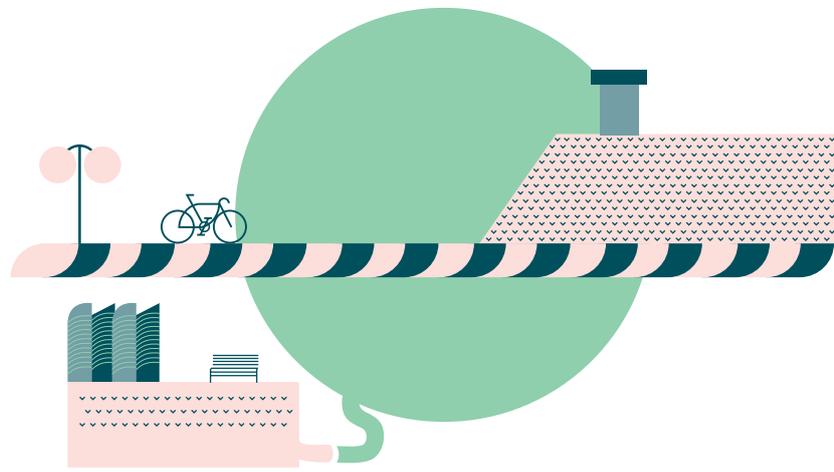
Green Roofs – Benefits and Ways to Reach Them in Israel – A short summary article from a comprehensive study on green roofs in Israel and their future direction. Prepared by Tamar Aharoni as part of her M.Sc. theses in Industrial Design in the Technion.

Rooftop Green Spaces – A review providing both a broad view and a specific focus on Israel by the SID Center for Green and Advanced Buildings, referring to *the potential green roofs have in education buildings in Israel*.

Green Roofs Conference, 2016, Knesset – Speaker presentations – Ministry of Agriculture and Rural Development and partners (some of whom are mentioned above and below).

Green Roofs Conference, 2015, Haifa University – Speaker presentations – Ministry of Agriculture and Rural Development and partners (some of whom are mentioned above and below).





2. Rules and regulations

Green Roofs in Israel – Position Paper – Ministry of Agriculture and Rural Development.

Israeli Standard for Green Buildings, reference to green roofs – Aviel Ilink, Israeli Green Building Council (ILGBC).

Legislation promoting the construction of green roofs – Theoretical background and comparative survey – Atty. Yaron Ungar, Legal Office, Israeli Knesset.

Global policies for building green roofs – By landscape architect, Revital Shoshani (from a presentation given in the Knesset Green Roofs Conference, 2016).

Policy paper for building and maintaining gardens on roofs and facades – A guidance paper providing background and summary information for all aspects of green roof construction, with special focus on practical and policy-related issues. Prepared for the Jerusalem Municipality (appears on the municipal website) by Landscape Architects 1999, CityLink, Idit Hod.

Policy Brochure – How Your Community Will Benefit From Green Roof Policy – from ‘Green Roofs for Healthy Cities’ a clear and accurate brochure for the public, aimed to raise awareness to the feasibility of green roofs initiatives.

Green Roofs Policies– Arch. Goya Ngan reviews and sets a framework for Landscape Architecture Canada Foundation– about worldwide policy types and existing policies (beginning chapter 3).

Basel, Switzerland: Building regulations for green roofs– A case study of Basel and Swiss policies which led Basel, since 2002 to be the city with the largest area of green roofs per capita in the world.

Municipality of Toronto– A comprehensive green roofs manual for the city including background, reference information for entrepreneurs, regulations and more.

NYC municipality green roof licensing frequent Q & A – A licensing guide for residents and business including tax abatement policies.

Municipality of Chicago Sustainable Development Policy Handbook– Includes specific compliance requirements (Section 5) and permit checklist and flowchart (scroll down to open links).

City of Sydney green roofs and walls policy implementation program – Notable strategic work for influencing council, community and operators until 2030. coupled with an accessible Design Advice and Appliance Factsheet for residents about green walls and roofs.

3. The Technical Side of Green Roofs

(briefly reviewed in other sources presented in this document)

The Benefits and Challenges of Green Roofs on Public and Commercial Buildings - A report of the United States General Services Administration which highlights an economic analysis for each benefit type (Chapter 2) and a general cost-benefit methodology suggestion (p.67).

Municipality of New York - Green and Cool Manual- NYC Department of Design & Construction, office of Sustainable Design. The article tries to demonstrate the different options for keeping roofs cool and fighting urban heat island. Regarding green roofs, the link provides a detailed list of major factors to take into account when designing a roofing system; green roof type and maintenance aspects. includes as conclusion many implementation resources from the US.(p. 30 and onwards)

Green Roofs Technology - Form and Function - Leading company for design, development and invention of green roof technologies, originally from Germany.

Rov noy - A leading company for green roofs in Israel (also see summary of 2012 Green Roof Convention).

Ganron - A leading company for green roofs in Israel.

Building Vegetation - Company for green walls and roofs, developer, producer and distributor for various readymade systems in Israel.

Green roofs training website- The DIY green roof guide is recommended (not all of the guide is free).

Choosing plant species for green roofs in Israel – Abstract from Orna Switzer’s Master’s thesis, Tel Aviv University, 2010.

Roof Garden – What do the Roots Want? – Article by Dr. Itzhak Biran, Gan VaNof, magazine for gardening in israel.

4. Notable examples

(please feel free to email us with suggestions for additions or edits)

IGRA-International Green Roofs Association - Worldwide green roof database and photo gallery.

Living Roofs and Walls Technical Report: Supporting London Plan Policy- From the Mayor of London’s office, a study similar to others about benefits and recommendations for local policy change, provides an outstanding an fascinating review of eight case studies (P.30) and of barriers to Implementation (P. 39).

Key European reference projects - Curated by the EFB European Federation of Green Roof Associations.

Municipality of Chicago green roofs map- An interactive map of the 509 existing green roofs in the city and basic information about each, try opening the GIS factsheet available for each roof.

Green Roofs and Walls Inspirational Guide - Beautiful examples and info graphics slideshow by Green Villages- bright ideas for a sustainable Sydney.

Green roof and passive design - Notable examples from InHabitat Magazine.

DC greenworks - DC-based company, presents a gallery of over 70 Projects.

Urban Land Institute case studies - Via Verde - case studies search engine from a general and real estate research point of view.

Mapping Warsaw for green roofs: existing and potential- An article from the European Federation of Green Roof Associations, documenting the effort of mapping a city's potential, trying a speculative way of thinking for future planning.

ACROS Fukuoka Prefectural International Hall - Pioneering green architect Emilio Ambasz transposed a nearly 100,000-square-meter park in the city center onto 15 stepped terraces in 1994.

Primary School For Sciences And Biodiversity - Chartier Dalix Architects project in a Paris suburb creates a biodiversity supporting recreational and functional building on an island of Seine river.

The Kdas Green Roofs Ecology Center - Large-scale green roof and solar panel project - Haifa University, photo gallery.

Studio landscape Architecture, Nir-Kutz Architects - Green roof projects and others in Israel.

Knafo Klimor Architects - Green roofs and other sustainable projects.

Hydroponic Food Production Greenhouses on Dizengoff Center, Tel Aviv - LivingGreen work review.

Extensive green roofs for research on Israel Electric Corp. buildings - Article reviewing IEC's pioneering experience with the Kdas Institute and others, Amiel Wessel, Bracha Schindler, Shavit Toledo, Dr. Guinevere Kdas, Prof. Lior Blaustein.

On top of the world - Amir Balaban documented the first stages in the life of the living roof on the birdwatching station in Jerusalem, Society for the Protection of Nature in Israel.

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