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Introduction

In recent years, the urban heat island effect has become a prominent issue in prefectural and local governments across Japan. Policymakers are especially concerned about its consequences on increasing annual average temperatures, human health conditions such as heatstroke and sleeping disorders, and increasing occasions of torrential rain in urban areas.

Japan's green urban landscaping industry traces its roots to the cultural art of Japanese gardens in the past. However, the modern-day industry, with its focus on planting foliage and creating green spaces in urban spaces, did not begin until the 1960s, when mainstream consciousness of the environmental consequences of rapid industrial development began.

After Japan signed the Kyoto Protocol in 1997, recognition that green roofs contribute to environmental protection spread. In 2001, the Tokyo Metropolitan Government was the first prefectural-level authority to pass legislation requiring new and renovated buildings occupying private land greater than 1000 m² and public spaces greater than 250 m² to have green landscaping.¹ This law has been credited for advancing the green roof industry.

In 2009, the Ministry of the Environment published its first "Report on the environment effects of policies addressing the urban heat island effect." Of the six policies it identified that local authorities are promoting to combat the heat island effect, most local authorities had incentives to promote green roofs, as it was the most economical policy option.² Green roofs have also been identified to mediate air pollution and flooding from torrential rains and simultaneously turns underutilized portions of buildings into attractive design features.³

Market size and distribution

The Ministry of the Environment predicts that the entire urban green landscaping industry, including the green roof industry, will be worth 164 billion yen by 2020.⁴ According to the 2014 annual survey on green roofs and green walls by the Ministry of Land, Infrastructure, Transport, and Tourism, at least 413.8 hectares of green roof space was created from 2000 to 2014.⁵

¹ "東京における自然の保護と回復に関する条," December 2000, http://www.reiki.metro.tokyo.jp/reiki_honbun/g1011367001.html

² Ministry of the Environment, "ヒートアイランド対策の環境影響等に関する調査業務報告書," February 2009, https://www.env.go.jp/air/report/h21-06/03_3.pdf

³ Hakusou Ryoka Gijitsu Kyoka, "緑の効果," 2014, http://www.hakusoryokka.org/page_12.html

⁴ Ministry of the Environment, "環境ビジネスの市場規模及び雇用規模の推計結," https://www.env.go.jp/council/21kankyo-k/y210-03/ref_07.pdf

⁵ Ministry of Land, Infrastructure, Transport, and Tourism, "平成 26 年全国屋上・壁面緑化施工実績調査の結果報告," August 2015, <http://www.mlit.go.jp/common/001104759.pdf>

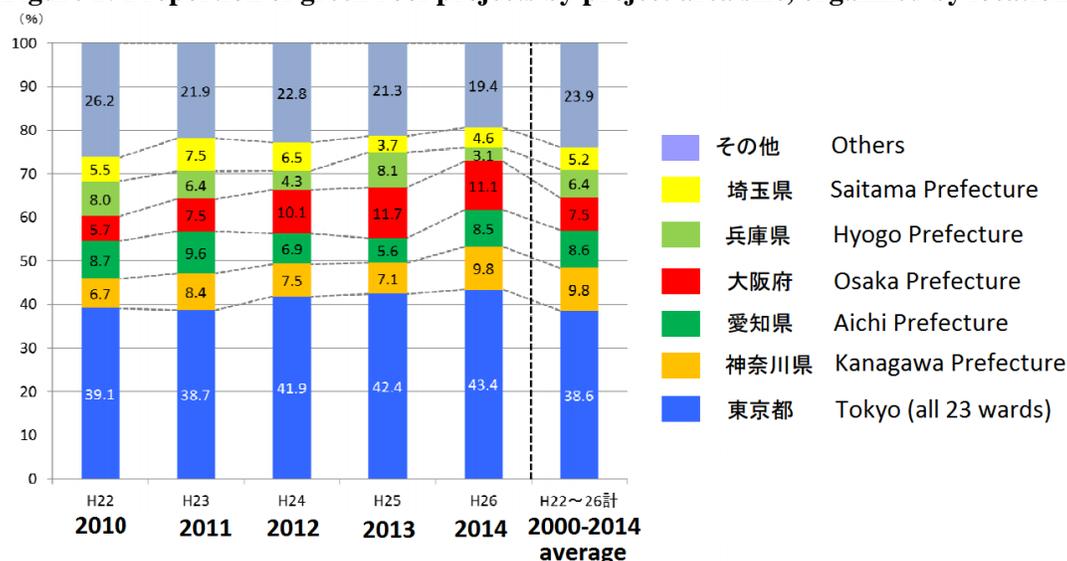
The Ministry's annual survey, while not a complete picture of the green roof market, is able to provide a snapshot of recent trends in the industry. Some numbers and charts from the survey are reproduced below.

Figure 1: Number of green roof projects in Japan, by year⁶

Year	Number of green roof projects	% growth, year on year
2000	468	-
2001	591	26.3%
2002	879	48.7%
2003	920	4.7%
2004	1128	22.6%
2005	1038	-8.0%
2006	1425	37.3%
2007	1485	4.2%
2008	1692	13.9%
2009	1311	-22.5%
2010	1349	2.9%
2011	1477	9.5%
2012	1605	8.7%
2013 (estimated)	1328	-17.3%
2014 (estimated)	1361	-2.48%

Source: Ministry of Land, Infrastructure, Transport, and Tourism

Figure 2: Proportion of green roof projects by project area size, organized by location⁷



Source: Reproduced from the Ministry of Land, Infrastructure, Transport, and Tourism

As shown above, the Japanese green roof experienced a boom in the mid-2000s. Following the Tokyo Metropolitan Government's law, a national law, the Urban Green Space Conservation Act (都市緑地保全法) was amended by the Diet in 2004, requiring major real estate developments in certain areas designated by local authorities to have a certain percentage of green space allocated.⁸ This resulted in heightened interest in green roofs. However, growth in the number of green projects slowed beginning

⁶ Ministry of Land, Infrastructure, Transport, and Tourism, "平成 26 年全国屋上・壁面緑化施工実績調査の結果報告"

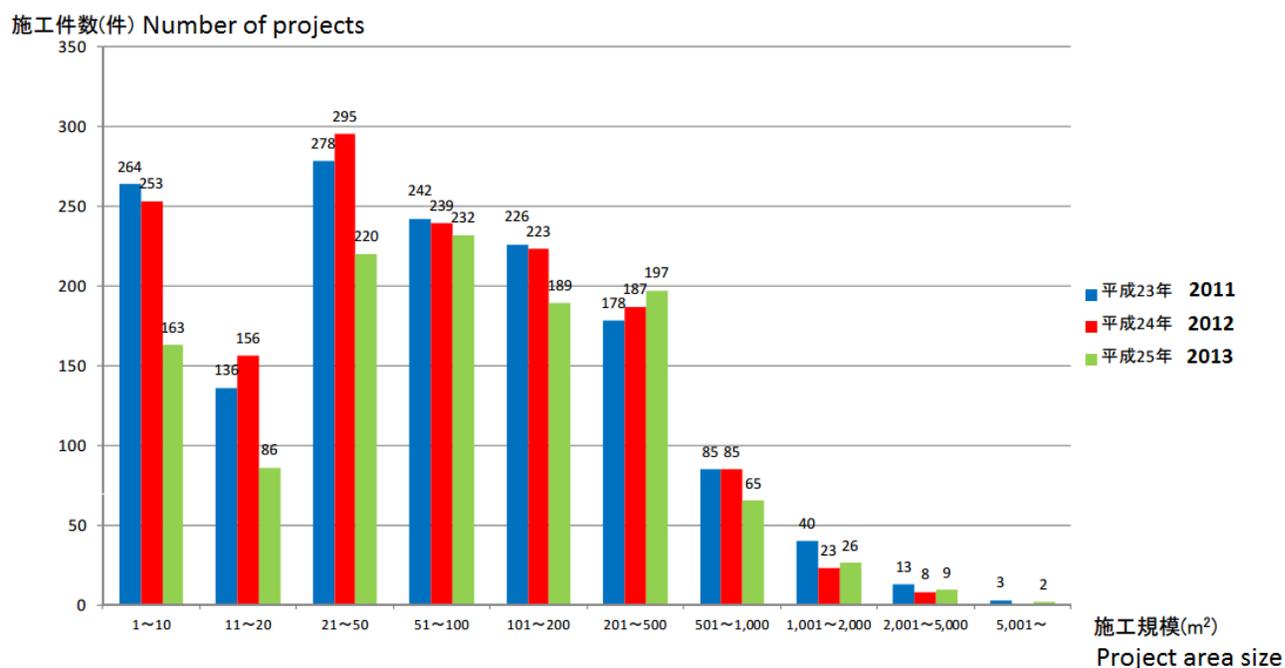
⁷ Ibid.

⁸ Alstarr Inc., "緑化スタイル・屋上緑化に関する条例," 2008, <http://www.ryokka.org/info/regulation/>

in 2009, and showed little growth in recent years after a decrease from 2012 to 2013. Part of the reason is because there has been no growth in the total number of construction projects in the last five years.⁹

Figure 2 shows that 69.2 percent of all green roof projects have been constructed within the 23 wards of Tokyo, Kanagawa Prefecture, Saitama Prefecture, Aichi Prefecture, and Osaka Prefecture, where major metropolitan areas such as Yokohama and Nagoya are located, from 2000 to 2014.¹⁰

Figure 3: Number of green roof projects, 2011-2013, by project area size¹¹

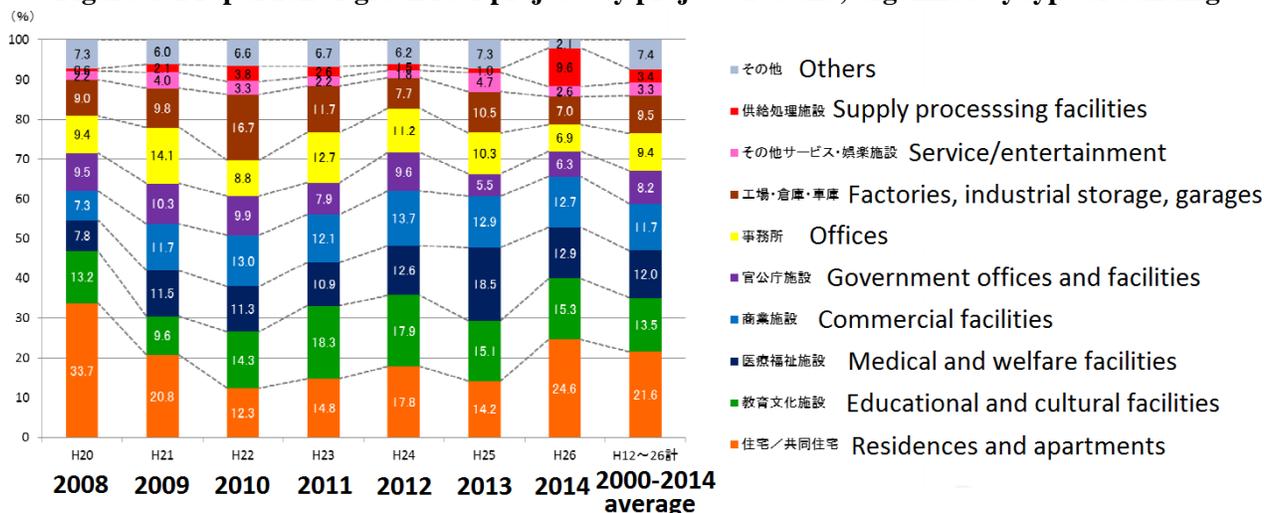


Source: Ministry of Land, Infrastructure, Transport, and Tourism

⁹ Ministry of Land, Infrastructure, Transport, and Tourism, “平成 26 年全国屋上・壁面緑化施工実績調査の結果報告.”

¹⁰ Ministry of Land, Infrastructure, Transport, and Tourism, “平成 26 年全国屋上・壁面緑化施工実績調査の結果報告.”

¹¹ Ministry of Land, Infrastructure, Transport, and Tourism, “平成 25 年全国屋上・壁面緑化施工実績調査の結果報告,” September 2014, <http://www.mlit.go.jp/common/001053622.pdf>

Figure 4: Proportion of green roof projects by project area size, organized by type of building¹²

Source: Ministry of Land, Infrastructure, Transport, and Tourism

As shown above, most green roof projects in Japan occupy an area not greater than 500 m², and the number of large-scale, medium-scale, and small-scale green roof projects have fluctuated. However, in recent years, the number small-scale green roof projects are decreasing. The number of green roof projects with an area less than 50 m² dropped by 35.6 percent from 2012 to 2013. This is due to the decreasing number of green roofs being installed in residential and apartment projects, which tend to have smaller-scale green roofs. As shown in Figure 4, the proportion of green roof area built in residences and apartments decreased from 33.7 percent in 2008 to just 14.0 percent in 2013.¹³

On the other hand, green roof projects with an area greater than 1000 m² are showing signs of growth, because more and more green roofs are being installed in medical and welfare facilities. As shown in Figure 4, the proportion of green roof area installed in medical and welfare facilities was 17.5 percent, well greater than the 11.8 percent average from 2000 to 2013.¹⁴

Green roofs are becoming especially popular in healthcare and welfare centers for the elderly, who are able to take advantage of the installed foliage for rehabilitation, therapy, and exercise. A recent notable example is the 820 m² rooftop garden at the Aichi Rehabilitation Hospital in Nishio city, Japan. It features a variety of paths for walking exercises and a vegetable field that patients can tend to for therapeutic purposes. The roof won an award in an annual contest for urban green landscape by the Organization for Landscape and Urban Green Infrastructure in 2011.¹⁵ As demand for rehabilitation and end-of-life care grows with Japan's aging population, large-scale green roof projects designed to complement the services offered by these facilities are predicted to grow as well.¹⁶

¹² Ministry of Land, Infrastructure, Transport, and Tourism, “平成 26 年全国屋上・壁面緑化施工実績調査の結果報告.”

¹³ Ministry of Land, Infrastructure, Transport, and Tourism, “平成 25 年全国屋上・壁面緑化施工実績調査の結果報告.”

¹⁴ Ibid.

¹⁵ Organization for Landscape and Urban Green Architecture, “屋上緑化部門：国土交通大臣賞,” April 2012, <https://urbangreen.or.jp/wp-content/uploads/2012/04/bfc6db65ba3d1688fce589c421a155b.pdf>

¹⁶ Ministry of Land, Infrastructure, Transport, and Tourism, “平成 25 年全国屋上・壁面緑化施工実績調査の結果報告.”

Government support for green roof projects

Ample financial support from governments, mainly on the prefectural, ward, and city-level, are available across Japan to support urban landscaping projects on roofs, walls, and verandas on new and existing building. Applicants must first submit blueprints for the green roof landscaping projects and apply for the subsidy before beginning any construction. After the green roof project is completed, upon submitting notification for the project's completion, showing a guarantee that the green roof will be maintained for at least a year and after passing an inspection by the local authority, the applicant is to receive the subsidy, marking the end of the support process.¹⁷

Depending on the local authority, the conditions for receiving the subsidy, amount of the subsidy, application procedures, and deadlines differ, so it is recommended that firms directly contact the authority responsible for administering the subsidy to find out the latest available information. Furthermore, it is likely that the application process, required documentation, business communication, and follow-up with the local authority are all conducted in the Japanese language. For new-to-entry U.S. suppliers, a Japanese partner or staff member(s) may prove helpful with the local language and cultural and business practices for successful entry into the Japanese market.

Below is a sample of the prefectures with the highest concentration of green roof projects and the local authorities and/or associations that award subsidies for green roof projects. For the most updated and accurate information, please visit the websites of the relevant authorities (in Japanese only).

Figure 5: Contact information of authorities that award subsidies for green roof projects

Location	Local authority/subsidy awarding body
Tokyo Prefecture	Tokyo Metropolitan Park Association Parks Section, Public Interest Promotion Section, Green Fund Sub-Section (公園事業部 公益事業推進課 緑の基金担当) 10F, Hygeia Health Plaza, Kabuki-cho, Shinjuku-ku, Tokyo 160-0021 TEL: 03-3232-3099 FAX:03-3232-3069 Email: midorinokikin@tokyo-park.or.jp http://www.tokyo-park.or.jp/profile/promotion/town/index.html
<i>Shinagawa Ward</i>	Shinagawa City Office Parks Division Green Sub-Division (公園課みどりの係) TEL: 03-5742-6799 http://www.city.shinagawa.tokyo.jp/hp/page000001200/hpg000001150.htm
<i>Sumida Ward</i>	Sumida City Office Urban Landscaping Advancement Division (緑化推進担当) 14F, Sumida Ward Office, 1-23-20 Atsumabashi, Sumida-ku, Tokyo 130-8640 TEL: 03-5608-6208 FAX: 03-5608-6934 Email: KANKYOU@city.sumida.lg.jp
<i>Chuo Ward</i>	Chuo City Office Water and Greenery Division, Urban Landscaping Advancement Sub-Division (水とみどりの課緑化推進係) TEL: 03-3546-5434 http://www.city.chuo.lg.jp/kankyo/midori/ryokkajyosei.html

¹⁷ Altstarr Inc., “助成金の取得から施工までの流れ,” 2008, <http://www.ryokka.org/info/assist/flow.html>

Location	Local authority/subsidy awarding body
<i>Chiyoda Ward</i>	<p>Chiyoda City Office Environment Town Planning Section, Environmental Policy Division, Energy Sub-Division (環境まちづくり部環境政策課エネルギー対策係) 1-2-1 Kudan-minami, Chiyoda-ku, Tokyo 102-8688 TEL: 03-5211-4256 FAX: 03-3264-8956 Email: kankyouseisaku@city.chiyoda.lg.jp http://www.city.chiyoda.lg.jp/koho/machizukuri/kankyo/hojo/heat-island.html</p>
<i>Toshima Ward</i>	<p>Toshima City Office Urban Development Section, Parks Division, Landscaping Promotion Group (都市整備部公園緑地課緑化推進グループ) TEL: 03-3981-4940 http://www.city.toshima.lg.jp/339/machizukuri/shizen/ryokuka/000879.html</p>
<i>Taito Ward</i>	<p>Taito Ward Office Subsidy for Residential and Office-Use Developments (台東区民間施設緑化推進助成金(個人宅・共同住宅・事業所向け) Environment Division, Landscaping Advancement Sub-Division (台東区役所環境課 普及啓発・みどり担当) 4-5-6 Higashi-Ueno, Taito-ku, Tokyo 110-8615 TEL: 03-5246-1323 (direct) FAX: 03-5246-1159 http://www.city.taito.lg.jp/index/kurashi/kankyo/jyoseiseido/ryokukasuishin.html</p>
<i>Nerima Ward</i>	<p>Nerima City Office Environment Department, Green Promotion Division, Green Cooperation Sub-Division (環境部 みどり推進課 みどり協働係) TEL: 03-5984-2418 (direct) FAX: 03-5984-1227 http://www.city.nerima.tokyo.jp/kurashi/shigoto/midori/jyosei/okujouryokkajosei.html</p>
<i>Itabashi Ward</i>	<p>Itabashi City Office Civil Engineering Section, Green and Parks Division (土木部 みどりと公園課) 2-66-1 Itabashi, Itabashi-ku, Tokyo 173-8501 TEL: 03-3579-2525 FAX: 03-3579-2547 Email: midori@city.itabashi.tokyo.jp http://www.city.itabashi.tokyo.jp/c_kurashi/035/035138.html</p>
<i>Kita Ward</i>	<p>Kita City Office Life Environment Section, Environment Division, Natural Environment and Green Sub-Division (生活環境部環境課自然環境みどり係) 3F, Building 2, Kita City Office, 1-2-11 Oji-honmachi, Kita-ku, Tokyo TEL: 03-3908-8618 http://www.city.kita.tokyo.jp/kankyo/jutaku/kankyo/hojo/okujo/okujo.html</p>
<i>Koto Ward</i>	<p>Koto City Office Civil Engineering Section, Management Division, CIG Promotion Sub-Division (土木部管理課 CIG 推進係) TEL: 03-3647-2049 (direct) http://www.city.koto.lg.jp/seikatsu/douro/7486/7495.html</p>

Location	Local authority/subsidy awarding body
<i>Suginami Ward</i>	<p>Suginami City Office Urban Development Section, Green Parks Division, Green Business Sub-Division (都市整備部みどり公園課みどりの事業係) 1-15-1 Asagaya-minami, Suginami-ku, Tokyo 166-8570 TEL: 03-3312-2111 (representative) FAX: 03-5307-0697 http://www.city.suginami.tokyo.jp/guide/machi/midori/1005061.html</p>
<i>Setagaya Ward</i>	<p>Setagaya City Office Green and Water Policy Section, Green Policy Division (みどりとみず政策担当部みどり政策課) 4-21-27 Setagaya, Setagaya-ku, Tokyo 154-8504 TEL: 03-5432-2282 FAX: 03-5432-3083 http://www.city.setagaya.lg.jp/kurashi/102/126/418/405/d00007924.html</p>
<i>Meguro Ward</i>	<p>Meguro City Office Green and Parks Division (みどりと公園課) 2-19-15 Kami-Meguro, Meguro-ku, Tokyo 153-8573 TEL: 03-5722-9359 FAX: 03-3792-2112 http://www.city.meguro.tokyo.jp/kurashi/shizen/enjo/midorihogo/okujo.html</p>
<i>Minato Ward</i>	<p>Minato City Office http://www.city.minato.tokyo.jp/ryokukasuishin/kankyo-machi/kankyo/ryokuka/suishin/okujo.html Interested parties are requested to contact the City Planning Division (協働推進課まちづくり推進担当) of each Regional City Office in Minato Ward, depending on the location of the green roof project in Minato Ward. http://www.city.minato.tokyo.jp/kouhou/kuse/gaiyo/shisho.html</p>
<i>Shinjuku Ward</i>	<p>Shinjuku City Office Green Civil Engineering Section, Green Park Division (みどり土木部みどり公園課) TEL: 03-5273-3924 FAX: 3209-5595 http://www.city.shinjuku.lg.jp/seikatsu/file14_06_00006.html</p>
<i>Adachi Ward</i>	<p>Adachi City Office Green and Park Promotion Office, Green Promotion Division, Landscaping Promotion Sub-Division (みどりと公園推進室みどり推進課緑化推進係) TEL: 03-3880-5188 (direct) FAX: 03-3880-5620 Email: midori@city.adachi.tokyo.jp http://www.city.adachi.tokyo.jp/midori/machi/midori/joseshinse.html</p>
<i>Ota Ward</i>	<p>Ota City Office Environment and Global Warming Measures Division, Environmental Promotion Sub-Division (環境・地球温暖化対策課 環境推進担当) 電話 : 03-5744-1365 FAX : 03-5744-1532 http://www.city.ota.tokyo.jp/seikatsu/sumaimachinami/kankyou/ryoka/okujouhekimenryokukajosei.html</p>

Location	Local authority/subsidy awarding body
Saitama Prefecture	Saitama Prefectural Government Environment Section, Green and Nature Division, Everyday Green Sub-Division (環境部 みどり自然課 身近なみどり担当) 2F, Building 3, 3-15-1 Takasago, Urawa-ku, Saitama-shi, Saitama Prefecture 330-9301 TEL: 048-830-3149 FAX: 048-830-4775 http://www.pref.saitama.lg.jp/a0508/midorisaisei-top/minkanhojyo.html
Aichi Prefecture	Nagoya City Office Green Civil Engineering Department, Green Lands Section, Green Land Maintenance Division, Landscaping Guidance and Review Sub-Division (緑政土木局 緑地部 緑地維持課 緑化指導審査係) TEL: 052-972-2465 FAX: 052-972-4143 Email: a2481@ryokuseidoboku.city.nagoya.lg.jp http://www.city.nagoya.jp/ryokuseidoboku/page/0000008309.html
Osaka Prefecture	Osaka Prefectural Government Environment and Agriculture Section, Landscaping Promotion Office, Landscaping Planning Division, Urban Greening Group (環境農林水産部 みどり推進室 みどり企画課 都市緑化グループ) 22F, Osaka Prefectural Government Sakishima Building, 1-14-16, Nankokita, Suminoe Ward, Osaka, Osaka Prefecture 559-0034 TEL: 06-6210-9558 (dial-in) FAX: 06-6210-9551 http://www.pref.osaka.lg.jp/midorikikaku/toshiryokka/midorizukuri2.html
Hyogo Prefecture	Hyogo Prefecture Government Prefectural Land Development Section, Town Development Department, Urban Policy Division, Greening Policy Team (県土整備部まちづくり局都市政策課緑化政策班) TEL: 078-362-3563 FAX: 078-362-9487 Email: kendo_toshi@pref.hyogo.lg.jp http://web.pref.hyogo.lg.jp/wd20/wd20_000000005.html#h03

(Note: These are approximate, unofficial translations of the government department names. Please contact the relevant local authority for the most updated contact information.)

Major Japanese players in the market

General contractors and makers and vendors of landscaping and agricultural materials make up most of the firms in the market, but there are also subsidiaries of some conglomerates such as Suntory Midorie. Their business activities include producing and selling materials related to green roof projects.

Because the green roof project involves firms that intersect between multiple industries, it is difficult to obtain an exact figure of the number of firms in the market. For its annual survey in 2014, the Ministry of Land, Infrastructure, Transport, and Tourism invited 474 landscaping and general engineering firms that handle green roof and green wall projects to respond to the survey.¹⁸ While that number fluctuates year by year, it is reasonable to say that there is already plenty of competition between domestic firms in the market for green roofs.

¹⁸ Ministry of Land, Infrastructure, Transport, and Tourism, “平成 26 年全国屋上・壁面緑化施工実績調査の結果報告.”

A look at the websites of some of the major firms shows that they are well-versed into the national, prefectural, and city-level finance incentive schemes available for the installation of green roof projects. They publicly advertise that they are able to provide in-person and telephone consultations and to design green roof specifications for clients to make use of the schemes. A number of trade associations and non-profit organizations serve to maintain industry standards and advance research on the benefits of green roofs and urban landscaping to promote its adoptions by developers. For example, the Organization for Landscape and Urban Green Infrastructure organizes a contest and gives awards recognizing the most innovative green roof spaces installed across Japan every year.

Figure 6: Examples of Japanese firms in the green roof market

Company name	Examples of past green roof installations
Architectural Yamade Corporation http://www.a-yamade.co.jp/	<ul style="list-style-type: none"> • Motoazabu Hills, a luxury 29-storey residential building in Minato-ku, Tokyo • Onoshimin Hospital, in Hyogo Prefecture • Building #4, Department of Architecture, Tokyo City University
Token Inc. http://www.token-web.com/	<ul style="list-style-type: none"> • Buildings #21 and #23, Kanazawa Institute of Technology, Ishikawa Prefecture • The Hokuriku area office of the Chunichi Shimbun newspaper, located in Kanazawa, Ishikawa Prefecture • Rooftop of factory owned by Takamatsu Machinery Co., Ltd.
Dainichi Chemical https://www.dainichikasei.co.jp/	<ul style="list-style-type: none"> • Apartments in Sumida-ku, Tokyo • Large-scale shopping mall in Hamamatsu city, Shizuoka Prefecture
KYODO KY-TEC Corp. http://www.ky-tec.co.jp/	<ul style="list-style-type: none"> • Suginami Elementary School, located in Suginami, Tokyo • Kasumigaseki Building, 36-storey skyscraper in Chiyoda, Tokyo • Park Court Akasaka The Tower, 43-storey luxury residential building in Minato-ku, Tokyo • Headquarters of the Ministry of Foreign Affairs • Hikawashita Geriatric Health Service Facility, Bunkyo-ku, Tokyo

Market issues and obstacles

Firms interested in the green roof market should take into consideration the necessary laws and regulations before any project can begin. Because green roof projects, and urban landscaping projects in general, are classified as civil engineering projects, a Construction License issued by the prefecture, or the Ministry of Land, Infrastructure, Transport, and Tourism if the firm has offices in more than one prefecture, is required for all privately and publicly funded projects. In addition, green roof projects must follow official guidelines about urban landscaping, which differ with each prefecture.

Cost is a large inhibitor of the growth of Japan's green roof market. If developers wish to install high-quality green roofs that would become a design feature or attraction, it would need to make modifications to its buildings such that the rooftop can sustain the weight of heavier plants and trees, as well as any

irrigation systems necessary to keep plants watered. This could add further cost burdens to developers, who already need to invest additional funds to earthquake-proof large building developments.¹⁹

Firms should also take Japan's climate into consideration when marketing green roof projects. Many building rooftops house air conditioning units, limiting the space available and the cooling effects a green roof project could provide. Japan's summers are marked by periods of heavy rain and high temperatures, which can create both dry spells and the proliferation of pests and insects, which could affect the health of green roof installations.²⁰ The maintenance costs that developers must incur to maintain green roof ecosystems could therefore be higher than that in other countries with temperate climates. As a result, existing green roofs are more commonly found on the buildings of large corporations and government offices rather than apartments and mixed-use residential buildings.²¹

Market Outlook

The area of green roof projects built annually peaked at 387,326m² in 2008 and has been on the decline since. One reason is because there has been a shift by developers and architects to build green walls instead of green roofs. Technology related to green walls has advanced in recent years. In the past, only green wall installations could only accommodate moss-type plants. However, a wider variety of species can now be installed on green walls, allowing such installations to be a unique design feature of a new building development. Given that both green roofs and green walls count for the mandatory urban landscaping areas under local laws, given that high-quality, mixed-species green walls are visually attractive, especially for commercial facilities such as shopping malls, more recently, real estate developers have been choosing to install green walls over green roofs.²²

Moreover, since the 2011 Tohoku earthquake and tsunami, there has been increasing concern about Japan's long-term energy security. Demand for renewable energy facilities, including photovoltaic energy facilities in both residential and non-residential areas, is expected to soar in the coming decade. As a result, developers have greater incentives to install rooftop solar panels on buildings rather than green roofs to reduce the cost of electricity consumption. Given the diminished merits of installing green roofs on new real estate developments, there is a possibility that the market for solar panels and green walls will expand at the expense of the growth of the green roof market.²³

Useful links to trade associations and relevant organizations

Hakusou Ryoka Gijitsu Kyokai

Established in 2003 to provide an association for firms with thin-layered green roof products.
<http://www.hakusoryokka.org/> (Japanese-only website)

Japan Landscape Contractors Association

Represents contractors in the landscaping industry.
<http://jalc.or.jp/english/index.html>

Japan Building Materials Association

¹⁹ Hosoda Seminar, “都心における屋上緑化の普及に向けて,” 2011, <http://seminar.econ.keio.ac.jp/hosoda/root/data/reference/22/FW1.pdf>

²⁰ Ibid.

²¹ Ibid.

²² Seiichiro Shiozawa, “減る屋上緑化、増える壁面緑化—都市緑化月間に屋上緑化を考える,” October 2012, <http://www.nli-research.co.jp/report/detail/id=40240>

²³ Keisuke Inoue, “Green Business,” December 2013, <http://www.keieisoft.jp/business/pdf/20130683.pdf>

Represents firms in the construction industry and conducts research on construction materials, including on green roofs.

<http://www.kenzai.or.jp/>

Organization for Landscape and Urban Green Infrastructure

Established in 2013, promotes green city development by supporting private and public entities, and supported by the Ministry of Land, Infrastructure, Transport and Tourism.

<https://urbangreen.or.jp/about/about-us-english>

Telephone: +81-03-5216-7191

Fax: +81-03-5216-7194

Sky Front Forum

A non-profit organization dedicated to research on green roof spaces.

<http://www.sky-front.or.jp/> (Japanese-only website)

Ministry of Infrastructure, Transport, and Tourism

Government policies, initiatives, and research on urban green landscapes can be found on their website.

<http://www.mlit.go.jp/toshi/park/index.html> (Japanese-only website)

References

Alstarr Inc. “緑化スタイル・屋上緑化に関する条例。” 2008. <http://www.ryokka.org/info/regulation/>

Altstarr Inc. “助成金の取得から施工までの流れ。” 2008.

<http://www.ryokka.org/info/assist/flow.html>

“東京における自然の保護と回復に関する条。” December 2000.

http://www.reiki.metro.tokyo.jp/reiki_honbun/g1011367001.html

Ministry of the Environment. “ヒートアイランド対策の環境影響等に関する調査業務報告書.”

February 2009. https://www.env.go.jp/air/report/h21-06/03_3.pdf

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