

Appendices

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Appendix 1: Zone Classification Data

1. Zone Classification based on Energy Conservation Standard

The zone classification based on the energy conservation standard divides Japan into six zones: Zone I to Zone VI. The zone classification by prefecture is shown in Table 1 and municipalities that belong to a different zone classification are listed in tables (1) to (5) below. This document is targeted at Zones VI and V of the six zones.

* See Fig. 1 on p.388 for the zone classification map.

Table 1 Classification by prefecture

Zone classification	Prefecture names
Zone I	Hokkaido
Zone II	Aomori, Iwate, Akita
Zone III	Miyagi, Yamagata, Fukushima, Tochigi, Niigata, Nagano
Zone IV	Ibaraki, Gunma, Saitama, Chiba, Tokyo, Kanagawa, Toyama, Ishikawa, Fukui, Yamanashi, Gifu, Shizuoka, Aichi, Mie, Shiga, Kyoto, Osaka, Hyogo, Nara, Wakayama, Tottori, Shimane, Okayama, Hiroshima, Yamaguchi, Tokushima, Kagawa, Ehime, Kochi, Fukuoka, Saga, Nagasaki, Kumamoto, Oita
Zone V	Miyazaki, Kagoshima
Zone VI	Okinawa

(1) Municipalities classified as Zone I despite the classification of Table 1

Aomori	Shichinohe Town, Towadako Town, Takko Town,
Iwate	Kuzumaki Town, Iwate Town, Nishine Town, Matsuo Village, Yuda Town, Sawauchi Village, Yamagata Village, Ashiro Town

(2) Municipalities classified as Zone II despite the classification of Table 1

Hokkaido	Hakodate City, Matsumae Town, Fukushima Town, Shiruichi Town, Kikonai Town, Esashi Town, Kaminokuni Town, Assabu Town, Ootobe Town, Kumaishi Town, Taisei Town, Kitahiyama Town, Shimamaki Village, Suttso Town
Miyagi	Kurikoma Town, Ichihassama Town, Uguisuzawa Town, Hanayama Village
Yamagata	Yonezawa City, Shinjo City, Sagae City, Nagai City, Obanzawa City, Nanyo City, Kohoku Town, Nishikawa Town, Asahi Town, Oe Town, Oishida Town, Kaneyama Town, Mogami Town, Funagata Town, Mamurogawa Town, Okura Town, Sakegawa Village, Tozawa Village, Takahata Town, Kawanishi Town, Oguni Town, Shirataka Town, Iide Town, Asahi Town
Fukushima	Kitakata City, Otama Village, Naganuma Town, Tenei Village, Tajima Town, Shimogo Town, Tateiwa Village, Hinoemata Village, Inan Village, Nango Village, Tadami Town, Atsushikano Village, Kitashiobara Village, Yamato Town, Nishiaizu Town, Takasato Village, Bandai Town, Inawashiro Town, Kawahigashi Town, Mishima Town, Kaneyama Town, Showa Village, Yabuki Town, Taishin Village, Hirata Village, Ono Town, Takine Town, Ogoe Town, Tokiwa Town, Funehiki Town, Kawauchi Village, Iitate Village
Tochigi	Nikko City, Ashio Town, Kuriyama Village, Fujihara Town, Shiobara Town
Niigata	Irihiro Village, Tsunan Town, Nakasato Village
Nagano	Suzaka City, Komoro City, Ina City, Komagane City, Nakano City, Omachi City, Iiyama City, Chino City, Shiojiri City, Koshoku City, Saku City, Usuda Town, Saku Town, Koumi Town, Kawakami Village, Minamimaki Village, Minamiaki Village, Kitaiki Village, Yachiho Village, Karuizawa Town, Mochizuki Town, Miyota Town, Tatehina Town, Asashina Town, Kitamimaki Village, Nagato Town, Tobu Town, Sanada Town, Takeishi Village, Wada Village, Fujimi Town, Hara Village, Takato Town, Tatsuno Town, Minowa Town, Minamimino Town, Miyada Village, Namiai Village, Hiraya Village, Shimojo Village, Kisofukushima Town, Agematsu Town, Narakawa Village, Kiso Town, Hiyoshi Village, Kaida Village, Mitake Village, Hata Town, Yamagata Village, Asahi Village, Nagawa Village, Azumi Village, Azusagawa Village, Ikeda Town, Matsukawa Village, Yasaka Village, Miasa Village, Hakuba Village, Otani Village, Obuse Town, Takayama Village, Yamanouchi Town, Kijimadaira Village, Nozawaonsen Village, Toyono Town, Shinano Town, Mure Village, Samizu Village, Togakushi Village, Kinasa Village
Gunma	Naganohara Town, Tsumagoi Village, Kusatsu Town, Kuni Village, Shirasawa Village, Tone Village, Katashina Village, Kawaba Village, Minakami Town
Yamanashi	Fujiyoshida City, Kobuchisawa Town, Nishikatsura Town, Oshino Village, Yamanakako Village, Kawaguchiko Town
Gifu	Takayama City, Nyukawa Village, Kiyomi Village, Shokawa Village, Shirakawa Village, Miya Village, Kuguno Town, Asahi Village, Takane Village, Furukawa Town, Kokufu Town, Kawai Village, Kamitakara Village

(3) Municipalities classified as Zone III despite the classification of Table 1

Aomori	Aomori City, Fukaura Town, Iwasaki Village
Iwate	Miyako City, Ofunato City, Ichinoseki City, Rikuzentakata City, Kamaishi City, Hanaizumi Town, Hiraizumi Town, Daito Town, Sanriku Town, Taro Town
Akita	Akita City, Noshiro City, Honjo City, Oga City, Hachimori Town, Yamamoto Town, Hachiryu Town, Minehama Town, Showa Town, Iitagawa Town, Tenno Town, Wakami Town, Ogata Village, Yuwa Town, Nikaho Town, Konoura Town, Kisakata Town, Yashima Town, Iwaki Town, Yuri Town, Nishime Town, Chokai Town, Ouchi Town
Ibaraki	Ishioka City, Shimodate City, Ogawa Town, Minori Town, Iwama Town, Iwase Town, Miwa Village, Daigo Town, Yasato Town, Chiyoda Town, Niihari Village, Akeno Town, Makabe Town, Yamato Village, Kyowa Town
Gunma	Numata City, Akagi Village, Kurohono Village, Azuma Village (Seta District), Kurabuchi Village, Onogami Village, Manba Town, Nakasato Village, Ueno Village, Shimonita Town, Nanmoku Village, Matsuida Town, Nakanajo Town, Azuma Village (Agatsuma District), Agatsuma Town, Takayama Village, Tsukiyono Town, Niiharu Village, Showa Village
Saitama	Ryokami Village, Otaki Village
Tokyo	Okutama Town
Toyama	Osawano Town, Oyama Town, Kamiichi Town, Tateyama Town, Unazuki Town, Hosoiri Village, Taira Village, Kamitaira Village, Toga Village
Ishikawa	Yoshinodani Village, Oguchi Village, Shiramine Village
Fukui	Izumi Village
Yamanashi	Tsuru City, Mitomi Village, Ashigawa Village, Kamikuishiki Village, Sutama Town, Takane Town, Nagasaka Town, Oizumi Village, Hakushu Town, Mukawa Village, Katsuyama Village, Ashiwada Village, Narusawa Village, Kosuge Village, Tabayama Village
Gifu	Hachiman Town, Yamato Town, Shirotori Town, Takasu Village, Meiho Village, Wara Village, Higashishirakawa Village, Sakashita Town, Kawaue Village, Kashimo Village, Tsukechi Town, Fukuoka Town, Hirukawa Village, Kushihara Village, Kamiyahagi Town, Hagiwara Town, Osaka Town, Gero Town, Maze Village, Miyagawa Village, Kamioka Town

Aichi	Inabu Town
Hyogo	Muraoka Town, Mikata Town, Sekinomiya Town
Nara	Ikoma City, Tsuge Village, Heguri Town, Muro Village, Nosegawa Village, Oto Village
Wakayama	Koya Town, Hanazono Village
Tottori	Wakasa Town, Sekigane Town, Nichinan Town, Hino Town, Kofu Town
Shimane	Nita Town, Yokota Town, Tonbara Town, Akagi Town, Daiwa Village, Hasumi Village, Mizuho Town
Okayama	Niimi City, Hokubo Town, Bicchu Town, Osa Town, Shingo Town, Tetsuta Town, Tessei Town, Katsuyama Town, Yubara Town, Mikamo Village, Shinjo Village, Kawakami Village, Yatsuka Village, Chuka Village, Tomi Village, Okutsu Town, Kamisabara Village, Aba Village
Hiroshima	Shobara City, Saiki Town, Yoshiwa Village, Tsutsuga Village, Togouchi Town, Geihoku Town, Oasa Town, Chiyoda Town, Yachiyo Town, Midori Town, Takamiya Town, Kozan Town, Sera Town, Yuki Town, Jinseki Town, Toyomatsu Village, Sanwa Town (Jinseki District), Joge Town, Soryo Town, Konu Town, Kimita Village, Funo Village, Sakugi Village, Kisa Town, Mirasaka Town, Saijo Town, Tojo Town, Kuchiwa Town, Takano Town, Hiwa Town
Tokushima	Higashiyayama Village
Kochi	Hongawa Village

(4) Municipalities classified as Zone IV despite the classification of Table 1

Fukushima	Iwaki City, Hirono Town, Naraha Town, Tomioka Town, Okuma Town, Futaba Town
Tochigi	Utsunomiya City, Ashikaga City, Tochigi City, Sano City, Kanuma City, Oyama City, Moka City, Kaminokawa Town, Minamikawachi Town, Kamikawachi Town, Kawachi Town, Nishikata Town, Awano Town, Ninomiya Town, Mashiko Town, Motegi Town, Ichikai Town, Haga Town, Mibu Town, Ishibashi Town, Kokubunji Town, Nogi Town, Ohira Town, Fujioka Town, Iwafune Town, Tsuga Town, Ujiie Town, Takanezawa Town, Minaminasu Town, Karasuyama Town, Tanuma Town, Kuzuu Town
Niigata	Niigata City, Sanjo City, Kashiwazaki City, Shibata City, Niitsu City, Mitsuke City, Murakami City, Tsubame City, Itoigawa City, Ryotsu City, Shirone City, Toyosaka City, Joetsu City, Kyogase Village, Sasakami Village, Toyoura Town, Seiro Town, Kajikawa Village, Shiunji Town, Nakajo Town, Kurokawa Village, Kosudo Town, Yokogochi Town, Kameda Town, Iwamuro Village, Yahiko Village, Bunsui Town, Yoshida Town, Maki Town, Nishikawa Town, Ajikata Village, Katahigashi Village, Tsukigata Village, Nakanokuchi Village, Sakae Town, Nakanoshima Town, Mishima Town, Yoita Town, Washima Village, Izumozaki Town, Teradomari Town, Kariwa Town, Nishiyama Town, Kakizaki Town, Ogata Town, Kubiki Village, Yoshikawa Town, Sanwa Village, Nadachi Town, Nou Town, Omi Town, Arakawa Town, Kamihayashi Village, Sanboku Town, Awashimaura Village, Aikawa Town, Sawata Town, Kanai Town, Niibo Village, Hatano Town, Mano Town, Ogi Town, Hamochi Town, Akadomari Village
Nagano	Seinaiji Village, Oshika Village
Miyazaki	Miyakonojo City, Kobayashi City, Ebino City, Yamada Town, Takazaki Town, Takaharu Town, Suki Village, Nishimera Village, Nango Village, Saigo Village, Kitago Village, Kitakata Town, Morotsuka Village, Shiiba Village, Takachiho Town, Hinokage Town, Gokase Town
Kagoshima	Okuchi City, Miyanojo Town, Tsuruda Town, Satsuma Town, Hishikari Town, Yokogawa Town, Kurino Town, Yoshimatsu Town, Makizono Town, Kirishima Town, Osumi Town, Takarabe Town, Sueyoshi Town

(5) Municipalities classified as Zone V despite the classification of Table 1

Ibaraki	Hasaki Town
Chiba	Choshi City
Tokyo	Oshima Town, Toshima Village, Niijima Village, Kozushima Village, Miyake Village, Mikurajima Village, Hachijo Town, Aogashima Village, Ogasawara Village
Shizuoka	Atami City, Shimoda City, Kawazu Town, Minamiizu Town, Matsuzaki Town, Nishiizu Town, Omaezaki City, Hamaoka Town
Mie	Owase City, Kumano City, Mihama Town, Kiho Town, Udono Village
Wakayama	Gobo City, Shingu City, Hirogawa Town, Mihama Town, Hidaka Town, Yura Town, Shirahama Town, Hikigawa Town, Susami Town, Kushimoto Town, Nachikatsuura Town, Taiji Town, Koza Town, Kozagawa Town
Yamaguchi	Shimonoseki City
Tokushima	Yuki Town, Hiwasa Town, Mugi Town, Kainan Town, Kaifu Town, Shishikui Town
Ehime	Seto Town, Misaki Town, Tsushima Town, Uchiumi Village, Misho Town, Johen Town, Ipponmatsu Town, Nishiumi Town
Kochi	Kochi City, Muroto City, Aki City, Nangoku City, Tosa City, Susaki City, Sukumo City, Tosashimizu City, Toyo Town, Nahari Town, Tano Town, Yasuda Town, Kitagawa Village, Umaji Village, Geisei Village, Akaoka Town, Kagami Town, Noichi Town, Yasu Town, Yoshikawa Village, Ino Town, Haruno Town, Ogata Town, Otsuki Town, Mihara Village
Fukuoka	Fukuoka City: Hakata Ward, Chuo Ward, Minami Ward, Jonan Ward
Nagasaki	Nagasaki City, Sasebo City, Shimabara City, Fukue City, Hirado City, Koyagi Town, Iojima Town, Takashima Town, Nomozaki Town, Sanwa Town, Nagayo Town, Togitsu Town, Kinkai Town, Seihi Town, Saikai Town, Oshima Town, Sakito Town, Oseto Town, Sotome Town, Kuchinotsu Town, Manimiarima Town, Kitaarima Town, Nishiarie Town, Arie Town, Futsu Town, Fukae Town, Oshima Village, Ikitsuki Town, Ojika Town, Uku Town, Tabira Town, Emukae Town, Shikamachi Town, Kozasa Town, Saza Town, Yoshii Town, Sechibaru Town, Tomie Town, Tamanoura Town, Miiraku Town, Kishiku Town, Naru Town, Wakamatsu Town, Kamigoto Town, Shinuonome Town, Arikawa Town, Narao Town
Kumamoto	Yashiro City, Minamata City, Hondo City, Ushibuka City, Misumi Town, Sencho Town, Kagami Town, Tanoura Town, Ashikita Town, Tsunagi Town, Oyano Town, Himedo Town, Ryugatake Town, Goshoura Town, Kuratake Town, Sumoto Town, Shinwa Town, Amakusa Town, Kawaura Town
Oita	Saiki City, Tsurumi Town, Yonouzu Village, Kamae Town

Note: Names of the municipalities listed above are in accordance with Ordinance No. 2 of the Ministry of International Trade and Industry and the Ministry of Construction on March 30, 1999.

2. Passive Solar Zone Classification (PSP Classification)

The passive solar zone classification based on the solar radiation and temperature in winter explained in Section 3.4 Solar Radiation Heat Utilization divides Japan into five zones: Zone A to Zone E. The zone classification by prefecture is shown in Table 2 and municipalities that belong to a different zone classification are listed in tables (1) to (5) below. This document is targeted at Zones VI and V of the six zones.

* See Fig. 2 on p.389 for the zone classification map.

Table 2 Classification by prefecture

Zone classification	Prefecture names
Zone A	Hokkaido, Aomori, Akita, Yamagata, Niigata, Ishikawa
Zone B	Iwate, Toyama, Fukui, Gifu, Shiga, Kyoto, Nara, Tottori, Shimane, Hiroshima
Zone C	Miyagi, Fukushima, Nagano, Osaka, Hyogo, Okayama, Yamaguchi, Ehime, Fukuoka, Saga, Nagasaki
Zone D	Ibaraki, Tochigi, Gunma, Saitama, Chiba, Tokyo, Kanagawa, Yamanashi, Aichi, Mie, Wakayama, Tokushima, Kagawa, Kumamoto, Oita
Zone E	Shizuoka, Kochi, Miyazaki, Kagoshima

(Note) Okinawa is not included in this classification.

(1) Municipalities classified as Zone A despite the classification of Table 2

Iwate	Kuzumaki Town, Yuda Town, Sawauchi Village, Ashiro Town
Fukushima	Tajima Town, Shimogo Town, Tateiwa Village, Hinoemata Village, Inan Village, Nango Village, Tadami Town, Atsushiokano Village, Kitashiobara Village, Yamato Village, Nishiaizu Town, Takasato Village, Yanaizu Town, Aizutakada Town, Mishima Town, Kaneyama Town, Showa Village
Toyama	Himi City
Shimane	Tonbara Town, Akagi Town, Daiwa Village

(2) Municipalities classified as Zone B despite the classification of Table 2

Hokkaido	Sapporo City, Hakodate City, Muroran City, Kushiro City, Obihiro City, Kitami City, Abashiri City, Tomakomai City, Nemuro City, Chitose City, Noboribetsu City, Eniwa City, Ono Town, Nanae Town, Toi Town, Esan Town, Todohokke Village, Minamikayabe Town, Shikabe Town, Sawara Town, Mori Town, Naganuma Town, Higashimokoto Village, Memanbetsu Town, Bihoro Town, Tsubetsu Town, Koshimizu Town, Tanno Town, Kunneppu Town, Oketo Town, Tokoro Town, Engaru Town, Kamiyubetsu Town, Yubetsu Town, Shiraoi Town, Hayakita Town, Oiwake Town, Atsuma Town, Mukawa Town, Hobetsu Town, Biratori Town, Monbetsu Town, Niikappu Town, Shizunai Town, Mitsuihara Town, Urakawa Town, Samani Town, Erimo Town, Otofuke Town, Shihoro Town, Kamishihoro Town, Shikaoi Town, Shintoku Town, Shimizu Town, Memuro Town, Nakasatsunai Village, Sarabetsu Village, Churui Village, Taiki Town, Hiroo Town, Makubetsu Town, Ikeda Town, Toyokoro Town, Honbetsu Town, Ashoro Town, Rikubetsu Town, Urahoro Town, Kushiro Town, Akkeshi Town, Hamanaka Town, Shibechea Town, Deshikaga Town, Akan Town, Tsurui Village, Shiranuka Town, Onbetsu Town, Betsukai Town, Nakashibetsu Town, Shibetsu Town
Aomori	Hachinohe City, Towada City, Shichinohe Town, Misawa City, Momoishi Town, Rokunohe Town, Kamikita Town, Shimoda Town, Rokkasho Village, Higashidori Village, Sannohe Town, Gonohe Town, Takko Town, Nagawa Town, Nanbu Town, Hashikami Town, Fukuchi Village, Nango Village, Kuraishi Village, Shingo Village
Miyagi	Zao Town, Shichikashuku Town, Murata Town, Kawasaki Town, Taiwa Town, Tomiya Town, Ohira Village, Nakaniida Town, Onoda Town, Miyazaki Town, Shikama Town, Iwadeyama Town, Naruko Town, Tsukidate Town, Wakayanagi Town, Kurikoma Town, Takashimizu Town, Ichihassama Town, Semine Town, Uguisuzawa Town, Kannari Town, Shiwahime Town, Hanayama Village, Hasama Town, Towa Town, Nakada Town, Ishikoshi Town, Minamikata Town
Yamagata	Yamagata City, Kaminoyama City, Tendo City, Higashine City, Yamanobe Town, Nakayama Town
Fukushima	Fukushima City, Aizuwakamatsu City, Kitakata City, Nihonmatsu City, Kori Town, Date Town, Kunimi Town, Tsukidate Town, Kawamata Town, Iino Town, Adachi Town, Otama Village, Motomiya Town, Towa Town, Naganuma Town, Kagamiishi Town, Iwase Village, Tenei Village, Kitaizu Village, Shiokawa Town, Bandai Town, Inawashiro Town, Aizubange Town, Yugawa Village, Kawahigashi Town, Aizuhongo Town, Niitsuru Village, Nishigo Village, Yabuki Town, Taishin Village, Iitate Village
Tochigi	Kuriyama Village, Fujihara Town, Nasu Town
Gunma	Tsumagoi Village, Kusatsu Town, Katashina Village, Minakami Town, Niiharu Village
Niigata	Itoigawa City, Arai City, Yuzawa Town, Tsunan Town, Maki Village, Myokokogen Town, Nakago Village, Myoko Village, Itakura Town, Kiyosato Village, Omi Town
Ishikawa	Kanazawa City, Matto City, Yamanaka Town, Nonoi Town, Shiramine Village, Tsubata Town, Takamatsu Town, Nanatsuka Town, Unoke Town, Uchinada Town
Nagano	Nagano City, Suzaka City, Nakano City, Omachi City, Iiyama City, Seinaiji Village, Achi Village, Namiai Village, Hiraya Village, Neba Village, Shimojo Village, Kisofukushima Town, Agematsu Town, Nagiso Town, Narakawa Village, Kiso Village, Hiyoshi Town, Kaide Village, Mitake Village, Otaki Village, Okuwa Village, Yamaguchi Village, Ikusaka Village, Hotaka Village, Nagawa Village, Azumi Village, Horigane Village, Ikeda Town, Matsukawa Village, Yasaka Village, Miasa Village, Hakuba Village, Otari Village, Ooka Village, Obuse Town, Takayama Village, Yamanouchi Town, Kijimadaira Village, Nozawaonsen Village, Shinshushin Town, Toyono Town, Shinano Town, Mure Village, Samizu Village, Togakushi Village, Kinasa Village, Ogawa Village, Nakajo Village, Toyota Village, Sakae Village
Aichi	Inabu Town
Hyogo	Toyooka City, Kami Town, Kanzaki Town, Okawachi Town, Yamasaki Town, Ichinomiya Town, Haga Town, Chikusa Town, Kinokawa Town, Takeno Town, Kasumi Town, Hidaka Town, Izushi Town, Tanto Town, Muraoka Town, Hamasaka Town, Mikata Town, Onsen Town, Yoka Town, Yabu Town, Oya Town, Sekinomiya Town, Ikuno Town, Wadayama Town, Santo Town, Asago Town, Hikami Town, Aogaki Town, Ichijima Town
Wakayama	Misato Town, Koya Town, Hanazono Village, Shimizu Town, Miyama Village, Ryujin Village
Okayama	Niimi City, Hokubo Town, Osa Town, Shingo Town, Tetsu Town, Tessei Town, Katsuyama Town, Ochiai Town, Yubara Town, Kuse Town, Mikamo Village, Shinjo Village, Kawakami Village, Yatsuka Village, Chuka Village, Kamo Town, Tomi Village, Okutsu Town, Kamisabara Village, Aba Village, Kagamino Town, Katsuta Town, Nagi Town, Shoboku Town, Ohara Town, Higashiwakura Village, Nishiwakura Village, Kume Town
Yamaguchi	Hagi City, Nagato City, Misumi Town, Heki Town, Yuya Town, Kawakami Village, Abu Town, Tamagawa Town, Ato Town, Mutsumi Village, Susa Town, Asahi Village, Fukue Village
Tokushima	Ikeda Town, Ikawa Town, Higashiyayama Village, Nishiyayama Village
Ehime	Kuma Town, Omogo Village, Mikawa Village, Yanadani Village, Oda Town, Hirota Village, Uchiko Town, Ikazaki Town, Kawabe Village

(3) Municipalities classified as Zone C despite the classification of Table 2

Iwate	Miyako City, Ofunato City, Kuji City, Rikuzentakata City, Taro Town, Yamada Town, Tanohata Village, Fudai Village, Noda Village
Ibaraki	Ishioka City, Yamagata Town, Miwa Village, Suifu Village, Satomi Village, Daigo Town, Yasato Town, Chiyoda Town, Makabe Town
Tochigi	Nikko City, Imaichi City, Otawara City, Yaita City, Kuroiso City, Kamikawachi Town, Ashio Town, Shioya Town, Ujiie Town, Kitsuregawa Town, Bato Town, Ogawa Town, Yuzukami Village, Kurobane Town, Nishinasuno Town, Shiobara Town
Gunma	Numata City, Akagi Village, Azuma Village (Seta District), Kurabuchi Village, Komochi Village, Onogami Village, Nakasato Village, Ueno Village, Nakanojo Town, Azuma Village (Agatsuma District), Agatsuma Town, Naganohara Town, Kuni Village, Takayama Village, Shirosawa Village, Tone Village, Kawaba Village, Tsukiyono Town, Showa Village

Saitama	Ogano Town, Ryokami Village, Otaki Village, Kamiizumi Village
Yamanashi	Fujiyoshida City, Mitomi Village, Ashigawa Village, Kamikuishiki Village, Mitama Town, Takane Town, Nagasaka Town, Oizumi Village, Oshino Village, Yamanakako Village, Ashiwada Village, Narusawa Village
Gifu	Tajimi City, Seki City, Nakatsugawa City, Mino City, Mizunami City, Ena City, Minokamo City, Toki City, Kani City, Nanno City, Yoro Town, Kamiishizu Town, Tarui Town, Sekigahara Town, Godo Town, Ibigawa Town, Tanigumi Village, Ono Town, Ikeda Town, Kasuga Village, Motosu Town, Takatomi Town, Ijira Village, Mugegawa Town, Mugi Town, Kaminoho Village, Minami Village, Sakahogi Town, Tomika Town, Kawabe Town, Hichiso Town, Yaotsu Town, Shirakawa Town, Mitake Town, Kaneyama Town, Kasahara Town, Hirukawa Village, Iwamura Town, Yamaoka Town, Akechi Town, Kanayama Town
Shizuoka	Oyama Town
Aichi	Kasugai City, Inuyama City, Komaki City, Oguchi Town, Fuso Town, Fujioka Town, Obara Village, Shimoyama Village, Asuke Town, Asahi Town, Shitara Town, Toei Town, Toyone Village, Tomiyama Village, Tsugu Village
Kyoto	Kyoto City, Uji City, Kameoka City, Joyo City, Muko City, Nagaokakyo City, Yawata City, Kyotanabe City, Oyamazaki Town, Kumiya Town, Ide Town, Ujitawara Town, Yamashiro Town, Kizu Town, Kamo Town, Kasagi Town, Wazuka Town, Seika Town, Miyamiyamashiro Village
Mie	Ueno City, Nabari City, Kameyama City, Hokusei Town, Inabe Town, Daian Town, Toin Town, Fujiwara Town, Komono Town, Seki Town, Geino Town, Hakusan Town, Misugi Village, Iinan Town, Iitaka Town, Iga Town, Shimagahara Village, Ayama Town, Oyamada Village, Aoyama Town
Shiga	Otsu City, Omihachiman City, Yokaichi City, Kusatsu City, Moriyama City, Shiga Town, Ritto City, Chuzu Town, Yasu Town, Ishibe Town, Kosei Town, Minakuchi Town, Azuchi Town, Gamo Town, Ryuo Town, Eigenji Town, Gokasho Town, Notogawa Town, Aichigawa Town, Taga Town
Nara	Nara City, Gojo City, Gose City, Ikoma City, Heguri Town, Santo Town, Soni Village, Mitsue Village, Shinjo Town, Taima Town, Kashiba City, Shimokitayama Village, Kamikitayama Village, Kawakami Village, Higashiyoshino Village
Wakayama	Kainan City, Hashimoto City, Nokami Town, Uchita Town, Kokawa Town, Naga Town, Momoyama Town, Kishigawa Town, Iwade Town, Katsuragi Town, Koyaguchi Town, Kudoyama Town, Kanaya Town, Nakatsu Village, Hongu Town
Hiroshima	Hiroshima City, Takehara City, Mihara City, Onomichi City, Fukuyama City, Fuchu City, Otake City, Higashihiroshima City, Hatsukaichi City, Fuchu Town, Ono Town, Yachiyo Town, Mukaihara Town, Fukutomi Town, Toyosaka Town, Kochi Town, Hongo Town, Akitsu Town, Mitsugi Town, Kui Town, Mukaishima Town, Utsumi Town, Numakuma Town, Onohara Town, Kannabe Town, Shinichi Town
Tokushima	Ichiba Town, Awa Town, Kawashima Town, Yamakawa Town, Misato Village, Waki Town, Mima Town, Handa Town, Sadamitsu Town, Ichiu Village, Anabuki Town, Koyadaira Village, Mino Town, Miyoshi Town, Yamashiro Town, Mikamo Town
Kagawa	Kanonji City, Shionoe Town, Kagawa Town, Konan Town, Ayakami Town, Ryonan Town, Ayauta Town, Kotominami Town, Manno Town, Kotohira Town, Chunan Town, Takase Town, Yamamoto Town, Onohara Town, Toyoanaka Town, Toyohama Town, Saita Town
Kochi	Motoyama Town, Otoyo Town, Tosa Town, Okawa Village, Hongawa Village, Ikegawa Town, Agawa Village, Gohoku Village, Ochi Town, Yusuhara Town, Higashitsuno Village, Niyodo Village
Kumamoto	Tomochi Town, Kyokushi Village, Ozu Town, Ichinomiya Town, Aso Town, Minamioguni Town, Oguni Town, Ubuyama Village, Namino Village, Soyo Town, Takamori Town, Hakusui Village, Kugino Village, Choyo Village, Nishihara Village, Mifune Town, Mashiki Town, Yabe Town, Seiwa Village, Izumi Village, Mizukami Village
Oita	Hita City, Shonai Town, Yufuin Town, Kuju Town, Kokonoe Town, Kusu Town, Metsue Village, Nakatsue Village, Kamitsue Village, Oyama Town, Amagase Town, Sanko Village, Honyabakei Town, Yabakei Town, Yamakuni Town, Innai Town, Ajimu Town
Miyazaki	Gokase Town

(4) Municipalities classified as Zone D despite the classification of Table 2

Gifu	Gifu City, Ogaki City, Hashima City, Kagamihara City, Kawashima Town, Ginan Town, Kasamatsu Town, Yanaizu Town, Kaizu Town, Hirata Town, Wanouchi Town, Anpachi Town, Sunomata Town, Kitagata Town, Hozumi Town, Suminami Town, Shinsei Town, Itonuki Town
Shizuoka	Fujinomiya City, Gotenba City, Susono City, Shibakawa Town, Kawane Town, Nakakawane Town, Honkawane Town, Haruno Town, Tatsuyama Town, Sakuma Town, Misakiubo Town, Inasa Town
Osaka	Osaka City, Sakai City, Takaishi City, Tajiri Town
Hyogo	Kobe City, Amagasaki City, Akashi City, Nishinomiya City, Sumoto City, Ashiya City, Harima Town, Ieshima Town, Tsuna Town, Awaji Town, Hokudan Town, Ichinomiya Town, Goshiki Town, Higashiura Town, Midori Town, Seidan Town, Mihara Town, Nandan Town
Okayama	Okayama City, Kurashiki City, Tamano City, Kasaoka City, Nadasaki Town, Hayashima Town, Yamate Village, Kiyone Village, Funao Town, Konko Town, Kamogata Town, Yorishima Town, Satoshio Town, Mabi Town
Hiroshima	Kure City, Innoshina City, Kaita Town, Kumano Town, Saka Town, Etajima Town, Ondo Town, Kurahashi Town, Shimokamagari Town, Kamagari Town, Miyajima Town, Nomi Town, Okimi Town, Ogaki Town, Kurose Town, Yasuura Town, Kawajiri Town, Toyohama Town, Yutaka Town, Osaki Town, Higashino Town, Kinoe Town, Setoda Town
Yamaguchi	Hofu City, Kudamatsu City, Iwakuni City, Hikari City, Yanai City, Kuka Town, Oshima Town, Towa Town, Yu Town, Obatake Town, Kaminoseki Town, Yamato Town, Tabuse Town, Hirao Town, Tachibana Town, Waki Town
Ehime	Matsuyama City, Imabari City, Hojo City, Asakura Village, Tamagawa Town, Namikata Town, Onishi Town, Kikuma Town, Yoshiumi Town, Miyakubo Town, Hakata Town, Uoshima Town, Yuge Town, Ikina Village, Iwagi Village, Kamiura Town, Omishima Town, Sekizen Village, Nakajima Town, Masaki Town, Misaki Town, Tsushima Town, Uchiiumi Village, Misho Town, Johen Town, Ipponmatsu Town, Nishiumi Town
Kochi	Kitagawa Village, Umaji Village, Tosayamada Town, Kahoku Town, Monobe Village, Kagami Village, Tosayama Village, Ino Town, Sakawa Town, Kubokawa Town, Onomi Village, Hayama Village, Hidaka Village, Taisho Town, Towa Village, Nishitosa Village
Fukuoka	Omuta City, Yanagawa City, Chikugo City, Okawa City, Jojima Town, Oki Town, Mizuma Town, Setaka Town, Yamato Town, Mitsuhashi Town, Yamakawa Town, Takata Town
Saga	Saga City, Morodomi Town, Kawasoe Town, Higashiyoka Town, Kubota Town, Chiyoda Town, Ashikari Town, Tara Town
Nagasaki	Nagasaki City, Sasebo City, Shimabara City, Koyagi Town, Iojima Town, Takashima Town, Nomozaki Town, Sanwa Town, Tarami Town, Nagayo Town, Togitsu Town, Kinkai Town, Saikai Town, Oshima Town, Sakito Town, Oseto Town, Sotome Town, Konagai Town, Ariake Town, Kunimi Town, Mizuho Town, Minamikushiyama Town, Kazusa Town, Kuchinotsu Town, Nanamiarima Town, Kitaarima Town, Nishiarie Town, Izuhara Town, Mitsuhiwa Town, Toyotama Town, Mine Town, Kamiagata Town, Kamitsushima Town
Miyazaki	Ebino City, Nishimera Village, Nango Village, Morotsuka Village, Shiiba Village, Takachiho Town, Hinokage Town
Kagoshima	Sendai City, Kushikino City, Akune City, Izumi City, Okuchi City, Kaseda City, Kokubu City, Kasasa Town, Oura Town, Kawabe Town, Ichiki Town, Higashiichiki Town, Hiyoshi Town, Fukiage Town, Kinpo Town, Hiwaki Town, Iriki Town, Togo Town, Miyanojo Town, Tsuruda Town, Satsuma Town, Kedoin Town, Sato Village, Kamikoshiki Village, Shimokoshiki Village, Kashima Village, Noda Town, Takaono Town, Azuma Town, Nagashima Town, Hishikari Town, Kajiki Town, Aira Town, Kamo Town, Mizobe Town, Yokogawa Town, Kurino Town, Yoshimatsu Town, Makizono Town, Kirishima Town, Hayato Town, Fukuyama Town

(5) Municipalities classified as Zone E despite the classification of Table 2

Tokyo	Hachijo Town, Aogashima Village, Ogasawara Village
Kanagawa	Yokohama City, Yokosuka City, Miura City, Hayama City
Aichi	Toyohashi City, Tahara Town, Akabane Town, Atsumi Town
Mie	Ise City, Owase City, Toba City, Kumano City, Futami Town, Nansei Town, Nanto Town, Kisei Town, Ouchiya Village, Hamashima Town, Daio Town, Shima Town, Ago Town, Isobe Town, Kiinagashima Town, Miyama Town, Mihama Town, Kiho Town, Udono Village
Wakayama	Shingu City, Shirahama Town, Kamitonda Town, Hikigawa Town, Susami Town, Kushimoto Town, Nachikatsuura Town, Taiji Town, Koza Town
Tokushima	Anan City, Wajiki Town, Aioi Town, Yuki Town, Hiwasa Town, Mugi Town, Kainan Town, Kaifu Town, Shishikui Town
Oita	Saiki City, Tsurumi Town, Yonouzu Village, Kamae Town

Note: Names of the municipalities listed above are in accordance with Ordinance No. 2 of the Ministry of International Trade and Industry and the Ministry of Construction on March 30, 1999.

Fig. 1 Zone classification by energy conservation standard

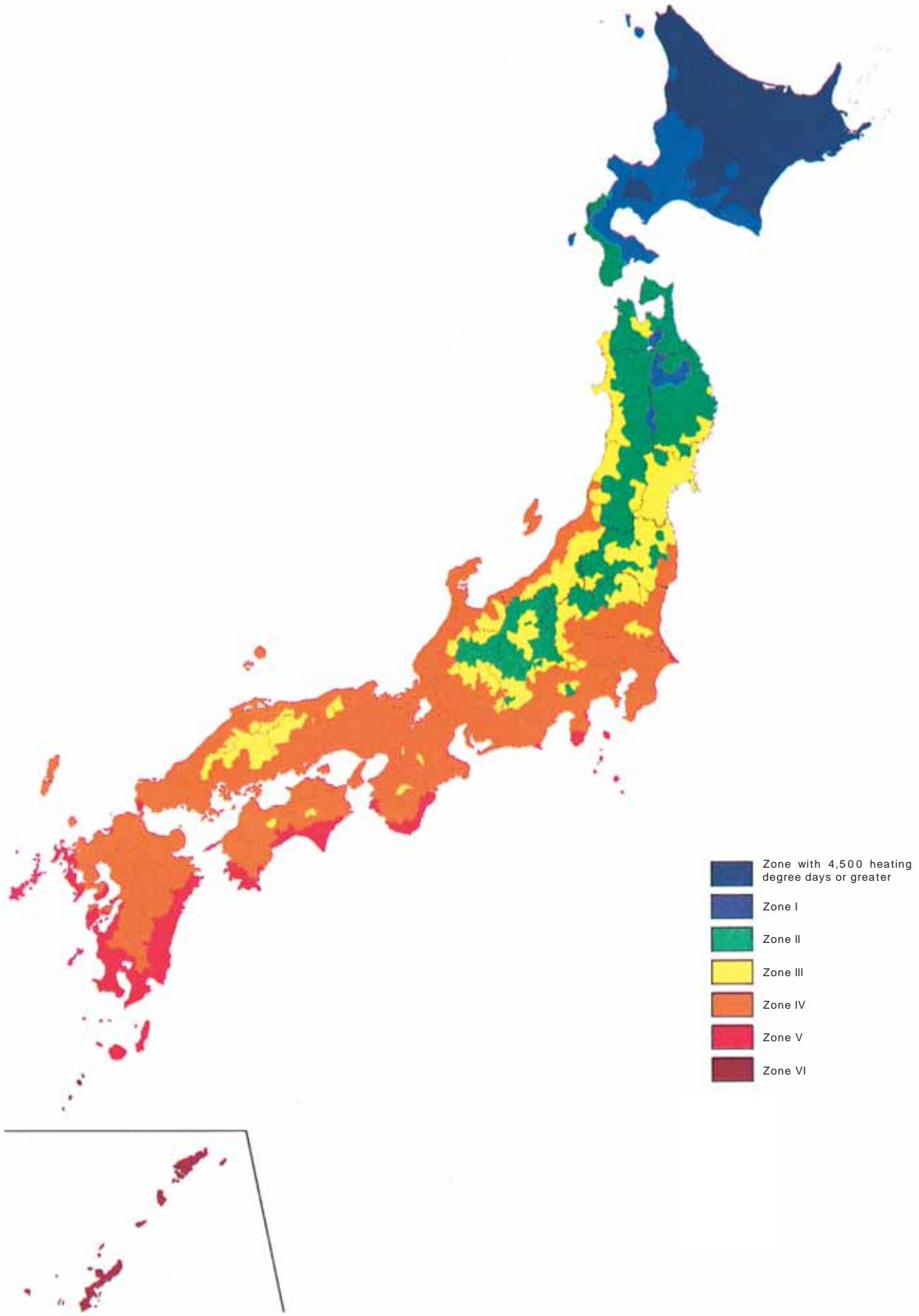
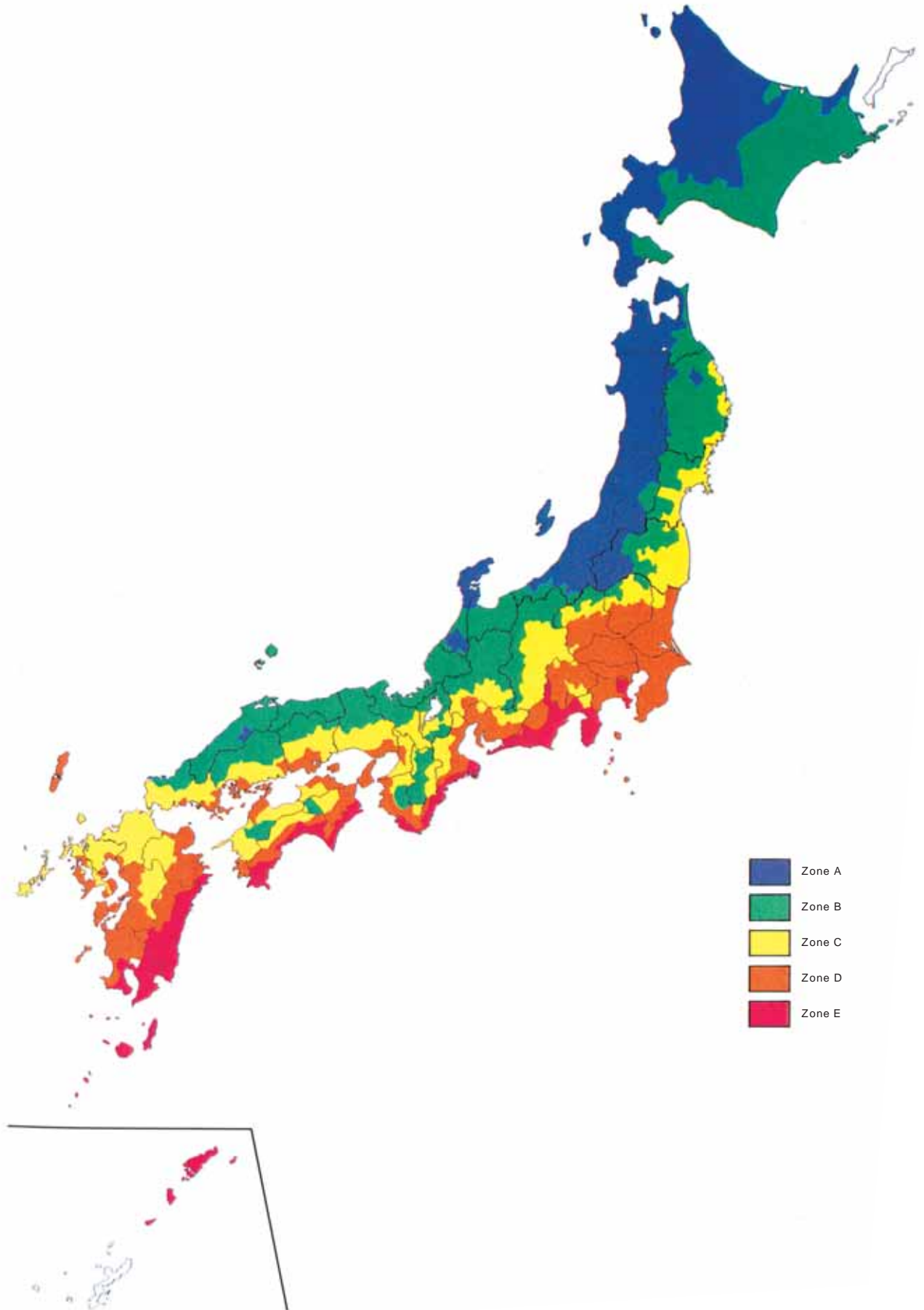


Fig. 2 Passive solar zone classification map (PSP classification map)



Appendix 2: Color Images of Illustrations that Appear in Black and White

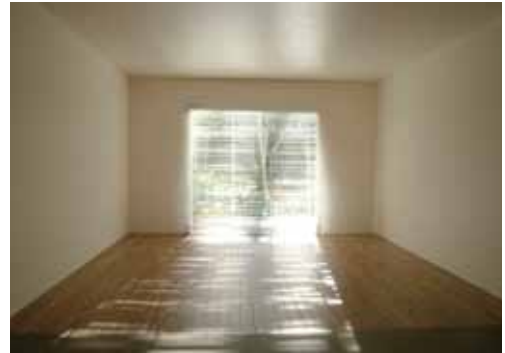
3.2 Daylight Utilization on p.074 075

Table 4 Characteristics of sun control devices 1 (installed outside)



Horizontal louvre

Table 5 Characteristics of sun control devices 2 (installed inside)



Horizontal blind



Horizontal blind



Paper sliding door



Bamboo blind



Sheer curtain



Awning



No device

3.2 Daylight Utilization on p.078



Photo 1 Stark contrast in lightning between window and inside of room

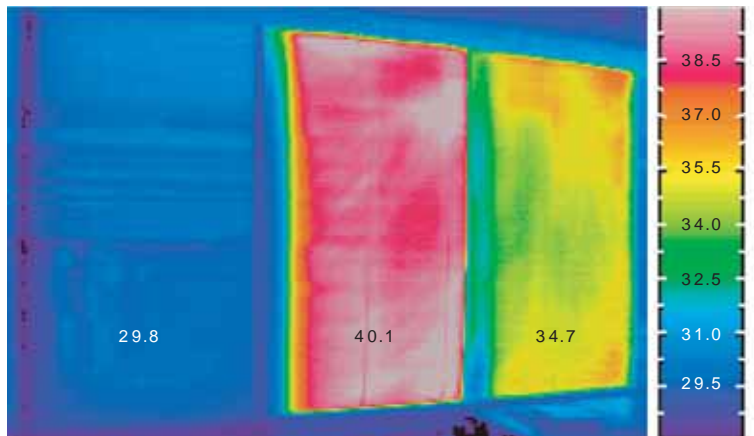


Photo 2 Example of using lighting to make room seem darker by creating contrast with windows

4.3 Solar Shading Methods for Zone V on p.197



Fig. 4 Comparison of window surface temperatures with use of blinds



4.3 Solar Shading Methods for Zone V on p.198

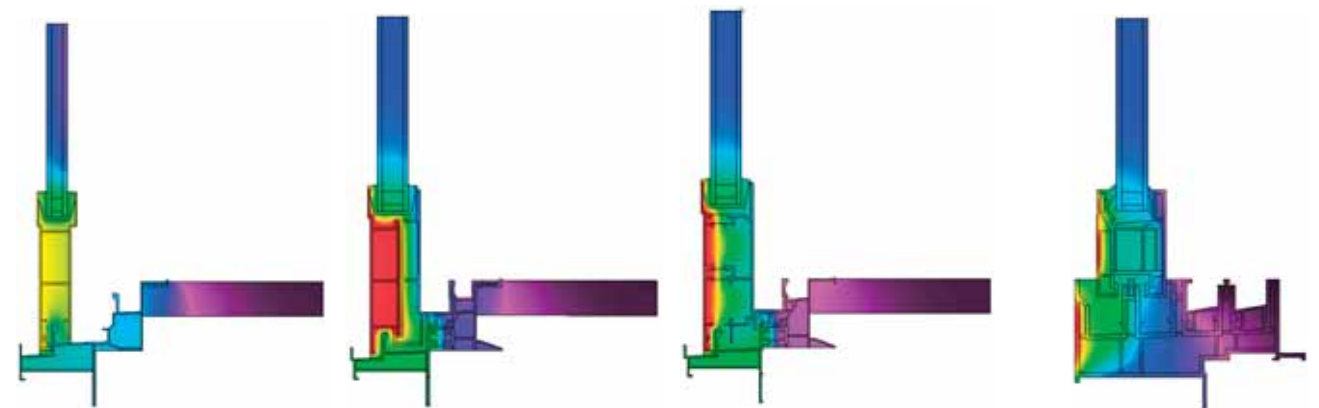


Fig. 5 Cross-sectional temperature distribution diagram of window frame (summer)

Appendix 3: Weather Data

You can refer to the LEHVE's website (<http://www.jjj-design.org>) for the weather data information (for 842 locations in Japan) that has been compiled for studying wind utilization methods (see Comment • Publication of weather data on p.044). A summary of the weather data is introduced in this section.

1. Structure of website

- How to compile the weather data: Methods for processing and displaying data are explained.
- How to use the weather data: Types of data disclosed and method of using data are explained.
- Weather station map by prefecture: Weather stations are specified on a map by prefecture. By selecting a weather station that one wants to view, weather data for the station concerned is displayed (Fig. 1, Fig. 2).
- Weather data by weather station: Data on outside wind speed, outside wind direction, outside air temperature and relative humidity are organized by weather station (PDF format).

2. Weather station for gathering weather data in hot humid regions

Weather stations correspond to the weather station names and station numbers of the Expanded AMeDAS (Automated Meteorological Data Acquisition System) Weather Data. Among the 842 locations in Japan, weather stations which fall under Zone V (16 prefectures) and Zone VI (Okinawa prefecture), which are hot humid regions, are the ones listed in Table 1.

3. Types of weather data which can be viewed

(1) Outside wind speed

The mean values of outside wind speed for each month, from June until September and from April to November, are shown by time of day (waking hours, sleeping hours and entire day). Wind speed was measured at a height equivalent to that of eaves of a second-story detached house (value at a location 6.5 m above ground).

(2) Outside wind direction

Characteristics of outside wind direction are indicated by using the frequency of becoming windward and leeward shown by direction which openings face (16 directions) and by time of day (waking hours and sleeping hours). In addition, changes in outside wind direction caused by seasons and time of day are clearly shown in wind rose, etc.

(3) Outside air temperature

Average temperatures by time of day (waking hours and sleeping hours) are shown for each month between April and November.

(4) Relative humidity

Average relative humidity by time of day (waking hours and sleeping hours) is shown for each month between April and November.

4. Regarding use of data

The published weather data was created by the LEHVE Development Committee (Cross Ventilation Task Group, Phase II Validation Experiment Subcommittee), based on the expanded AMeDAS weather data (for 20 years) from *Expanded AMeDAS Weather Data 1981 – 2000* issued by the Architectural Institute of Japan (published in 2005).

Permission has been obtained from the Research Committee on Environment Engineering of the Architectural Institute of Japan and Meteorological Data System Co., Ltd. to publish the weather data on the LHEVE website only so that the data can be used as reference materials for Section 3.1 Use and Control of Wind of this document. Reproducing this information or employing it for other uses is not permitted.

Weather data on Naha and Kagoshima is listed on p.394 and 395.

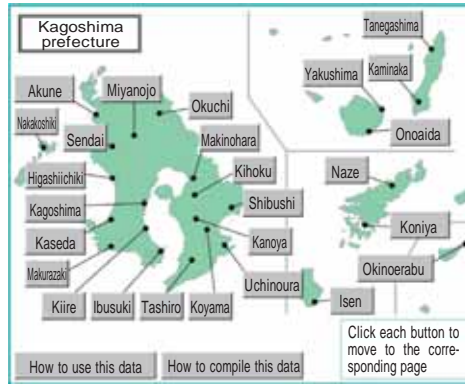
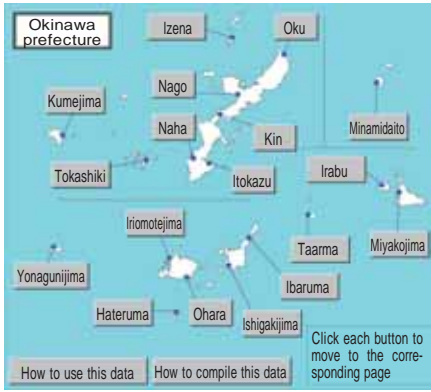


Fig. 1 Weather station map in Okinawa

Fig. 2 Weather station map in Kagoshima

Table 1 Weather stations for obtaining weather data in hot humid regions

Indicates locations considered to fall under Zone V and Zone VI

Zone V

Prefecture name	Station name	Station number	Prefecture name	Station name	Station number	Prefecture name	Station name	Station number	Prefecture name	Station name	Station number		
Ibaraki prefecture	Kitabaraki	309	Mie prefecture	Toba	486	Yamaguchi prefecture	Kuga	717	Miyazaki prefecture	Nobeoka	786		
	Daigo	310		Nansei	487		Shimonoseki	718		Hyuga	787		
	Ose	311		Kiinagashima	488		Yanai	719		Mikado	788		
	Hitachi	312		Owase	489		Agenosho	720		Nishimera	789		
	Kasama	313		Kumano	490		Munakata	721		Takanabe	790		
	Mito	314		Wakayama prefecture	Katsuragi		594	Yahata		722	Kakuto	791	
	Koga	315			Wakayama		595	Yukuhashi		723	Saito	792	
	Tsukubasan	316			Koyasan		596	Izuka		724	Kobayashi	793	
	Shimotsu	317			Shimizu		597	Maebaru		725	Miyazaki	794	
	Hokota	318			Ryuji		598	Fukuoka		726	Aoshima	795	
	Nagamine	319	Kawanabe		599	Dazaifu	727	Miyakonojo	796				
	Tsuchiura	320	Kurisugawa		600	Soeda	728	Aburatsu	797				
	Kashima	321	Shingu		601	Amagi	729	Kushima	798				
	Ryugasaki	322	Shirahama		602	Kurume	730	Kagoshima prefecture	Akune	799			
	Ogouchi	358	Nishikawa		603	Kuroki	731		Okuchi	800			
	Tokyo	Oume	359	Shionomisaki	604	Omura	732		Miyanojo	801			
		Nerima	360	Tokushima prefecture	Ikeda	663	Kunimi		733	Nakakoshi	802		
		Hachioji	361		Anabuki	664	Nakatsu		734	Sendai	803		
		Fuchu	362		Tokushima	665	Bungotakada		735	Higashiichiki	804		
Tokyo		363	Kyojo		666	Innai	736		Makinohara	805			
Shinkiba		364	Kamoda		667	Kitsuki	737		Kagoshima	806			
Ojima		365	Kito		668	Hita	738		Kihoku	807			
Nijima		366	Hiwasa		669	Kusu	739		Kaseda	808			
Miyakejima		367	Shishikui		670	Yufuin	740	Shibushi	809				
Hachiojima		368	Ehime prefecture		Omishima	677	Oita	741	Kiire	810			
Chichijima		369			Imabari	678	Inukai	742	Kanoya	811			
Chiba prefecture		Sawara		370	Tanbara	679	Takeda	743	Koyama	812			
		Abiko		371	Niihama	680	Saiki	744	Makurazaki	813			
		Funabashi		372	Mishima	681	Ume	745	Ibusuki	814			
	Sakura	373		Matsuyama	682	Kamae	746	Uchinoura	815				
	Choshi	374		Nagahama	683	Nagasaki prefecture	Waniura	747	Tashiro	816			
	Yokoshiba	375		Kuma	684		Izuhara	748	Tanegashima	817			
	Chiba	376		Ozu	685		Ashibe	749	Kaminaka	818			
	Mobara	377		Seto	686		Hirado	750	Yakushima	819			
	Kisarazu	378	Uwa	687	Matsuura		751	Onoaida	820				
	Ushiku	379	Uwajima	688	Sasebo		752	Naze	821				
	Sakahata	380	Chikanaga	689	Arikawa		753	Koniya	822				
	Kamogawa	381	Misho	690	Oseto		754	Isen	823				
	Katsuura	382	Hongawa	691	Nagasaki		755	Okinoerabu	824				
	Tateyama	383	Kochi prefecture	Motoyama	692		Kinogasayama	756	Zone VI	Okinawa prefecture	Izena	825	
Shizuoka prefecture	Ikawa	428		Odochi	693	Shimabara	757	Oku			826		
	Gotenba	429		Kochi	694	Fukue	758	Nago			827		
	Yoshiwara	430		Gomen	695	Kuchinotsu	759	Kin			828		
	Mishima	431		Aki	696	Nomozaki	760	Kumejima			829		
	Sakuma	432		Yamaguchi prefecture	Yusuhara	697	Kumamoto prefecture	Kahoku			766	Tokashiki	830
	Honkawane	433			Susaki	698		Minamioguni			767	Naha	831
	Shimizu	434			Kubokawa	699		Taimei			768	Itokazu	832
	Ajiro	435			Murotomisaki	700		Kikuchi			769	Minamidaito	833
	Shizuoka	436			Ekawasaki	701		Aso/Kurokawa			770	Irabu	834
	Tenryu	437	Saga		702	Kumamoto		771	Miyakojima	835			
	Hamamatsu	438	Sukumo		703	Asosan		772	Tarama	836			
	Makinohara	439	Nakamura		704	Takamori		773	Ibaruma	837			
	Matsuzaki	440	Shimizu		705	Misumi		774	Yonagunijima	838			
	Inatori	441	Susa		706	Kosa		775	Iriomotejima	839			
Fukude	442	Hagi	707	Matsushima	776	Ishigakijima	840						
Omaezaki	443	Yuya	708	Hondo	777	Ohara	841						
Irozaki	444	Tokusa	709	Yatsushiro	778	Hateruma	842						
Mie prefecture	Kuwana	479	Akiyoshidai	710	Minamata	779	Zone VI	Okinawa prefecture					
	Yokkaichi	480	Hirose	711	Hitoyoshi	780							
	Kameyama	481	Nishiichi	712	Ue	781							
	Ueno	482	Yamaguchi	713	Ushibuka	782							
	Tsu	483	Iwakuni	714	Takachiho	783							
	Obata	484	Hohu	715	Furue	784							
Kayumi	485	Kudamatsu	716	Kuraoka	785								

Location name	Naha	Location number	831
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Latitude (°) (North latitude)	26.2	Longitude (°) (East longitude)	127.7	Measurement point altitude (m)	28	Anemometer height (m)	47.7
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• Average wind speed (m/s)

Waking hours	Sleeping hours	Entire day
3.5	2.8	3.3

* Mean value from June to September in Fig. 2

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• Table for determining directions suitable for creating opening surfaces

	Direction	North	North-north east	Northeast	East-northeast	East	East-southeast	Southeast	South-southeast	South	South-southwest	Southwest	West-southwest	West	West-northwest	Northwest	North-northwest
Windward	Waking hours	×	△	△	○	○	◎	◎	◎	◎	○	○	○	△	×	×	×
	Sleeping hours	×	△	△	○	◎	◎	◎	◎	◎	○	○	△	×	×	×	×
Leeward	Waking hours	◎	○	○	○	△	×	×	×	×	△	△	○	○	◎	◎	◎
	Sleeping hours	◎	○	○	△	×	×	×	×	×	△	△	○	◎	◎	◎	◎

* Judgment criteria: In the "June-September" data in Fig. 1, 40% or higher is ◎, 30 - 40% is ○, 20 - 30% is △, and 20% or below is ×.

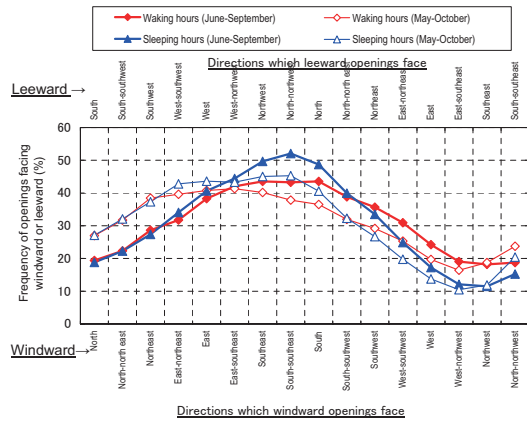


Fig. 1 Frequency of openings facing windward and

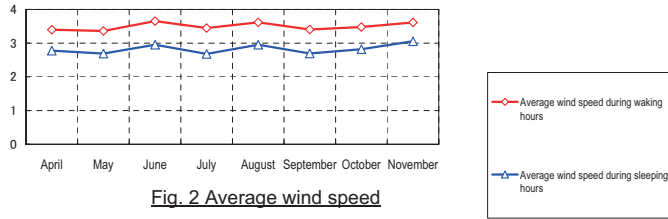


Fig. 2 Average wind speed

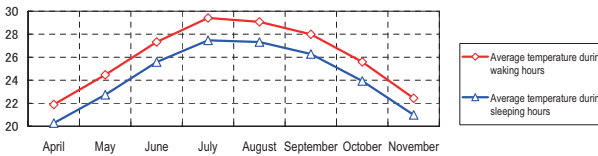


Fig. 3 Average temperature

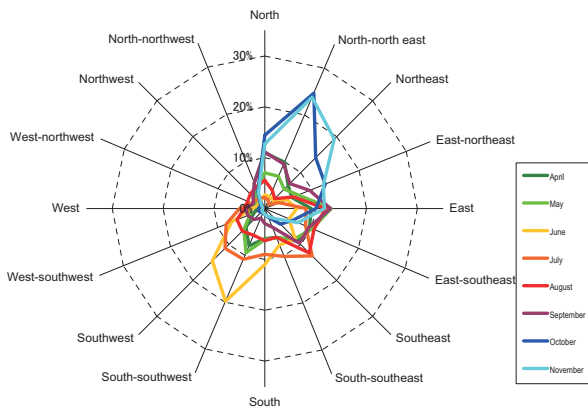


Fig. 4a Monthly wind rose (Waking hours)

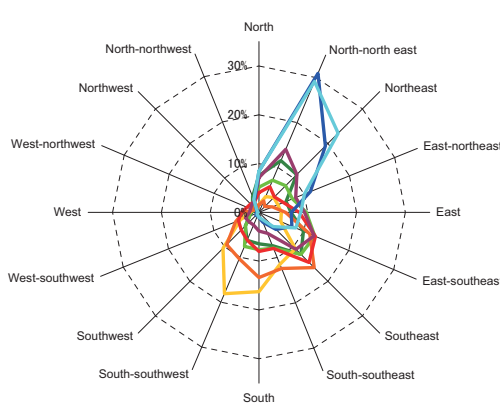


Fig. 4b Monthly wind rose (Sleeping hours)

Monthly weather data table

		April		May		June		July		August		September		October		November	
		Waking hours	Sleeping hours	Waking hours	Sleeping hours	Waking hours	Sleeping hours	Waking hours	Sleeping hours	Waking hours	Sleeping hours	Waking hours	Sleeping hours	Waking hours	Sleeping hours	Waking hours	Sleeping hours
Average temperature (°C)		21.9	20.3	24.5	22.7	27.3	25.6	29.4	27.5	29.1	27.3	28.0	26.3	25.6	23.9	22.4	21.0
Average relative humidity (%)		75	81	77	84	81	89	76	85	77	85	74	81	70	77	67	73
Average wind speed (m/s)		3.4	2.8	3.4	2.7	3.7	3.0	3.4	2.7	3.6	3.0	3.4	2.7	3.5	2.8	3.6	3.1
Wind direction	First direction	North	Southeast	East	East-southeast	South-southwest	South-southwest	Southeast	Southeast	Southeast	Southeast	East	North-north east	North-north east	North-north east	North-north east	North-north east
	Second direction	11%	12%	13%	12%	20%	18%	13%	16%	12%	15%	13%	14%	25%	31%	24%	29%
	Third direction	North-north east	North-north east	East-southeast	Southeast	Southwest	South	Southwest	South	East	East-southeast	North	East-southeast	North	Northwest	Northwest	Northwest
	Fourth direction	10%	12%	10%	12%	15%	16%	11%	13%	12%	13%	11%	12%	14%	19%	19%	23%
Wind direction	Third direction	East-southeast	Northeast	South-southwest	East	South	South-southwest	South-southwest	South-southwest	East-southeast	East	Southeast	Northeast	Northeast	East-northeast	North	East-northeast
Wind direction	Fourth direction	10%	11%	9%	10%	11%	11%	11%	12%	11%	8%	10%	11%	14%	11%	13%	10%

* This data was created based on the expanded AMeDAS weather data (for 20 years) from *Expanded AMeDAS Weather Data 1981 - 2000* issued by the Architectural Institute of Japan (published in 2005, <http://www.metds.co.jp/>).

* This data can be used as reference materials for "3.1 Use and Control of Wind" of Design Guidelines for Low Energy Housing with Validated Effectiveness. Permission has been obtained from the Research Committee on Environment Engineering of the Architectural Institute of Japan and Meteorological Data System Co., Ltd. to publish the weather data on the Design Guidelines for LHEVE website only (www.ijj-design.org). Please refrain from reproducing this information or employing it for other uses.

* In this data, waking hours are from 7:00 to 22:00 and sleeping hours are 23:00 to 6:00.

* For details regarding how to use this data and how it was created, please see "3.1 Use and Control of Wind" of Design Guidelines for Low Energy Housing with Validated Effectiveness" and p.002 - 003 of this PDF file.

Location name	Kagoshima	Location number	806
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Latitude (°) (North latitude)	31.6	Longitude (°) (East longitude)	130.6	Measurement point altitude (m)	4	Anemometer height (m)	44.8
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• Average wind speed (m/s)

Waking hours	Sleeping hours	Entire day
2.2	1.6	2.0

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* Mean value from June to September in Fig. 2

• Table for determining directions suitable for creating opening surfaces

Direction		North	North-east	Northeast	East-northeast	East	East-southeast	Southeast	South-southeast	South	South-southwest	Southwest	West-southwest	West	West-northwest	Northwest	North-northwest	
Windward	Waking hours	△	△	△	△	○	○	○	○	○	△	△	○	○	○	○	○	△
	Sleeping hours	⊙	⊙	○	△	△	×	×	×	×	×	×	△	○	⊙	⊙	⊙	⊙
Leeward	Waking hours	○	△	△	○	○	○	○	△	△	△	△	△	○	○	○	○	○
	Sleeping hours	×	×	×	△	○	⊙	⊙	⊙	⊙	⊙	⊙	⊙	△	△	×	×	×

* Judgment criteria: In the "June-September" data in Fig. 1, 40% or higher is ⊙, 30 - 40% is ○, 20 - 30% is △, and 20% or below is ×.

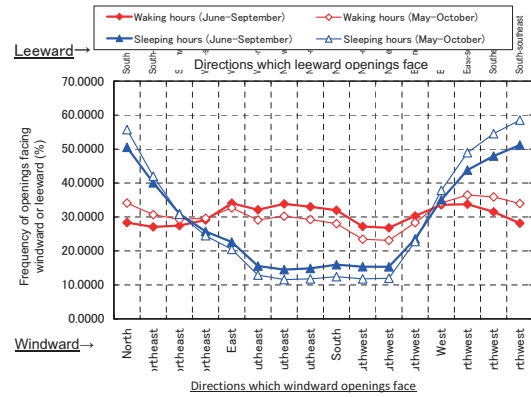


Fig. 1 Frequency of openings facing windward and leeward

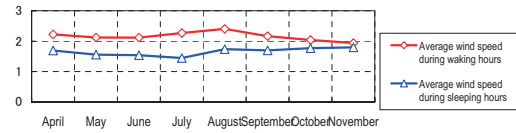


Fig. 2 Average wind speed

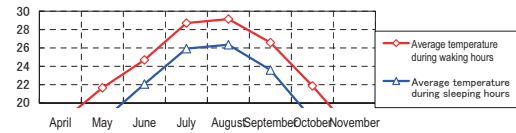


Fig. 3 Average temperature

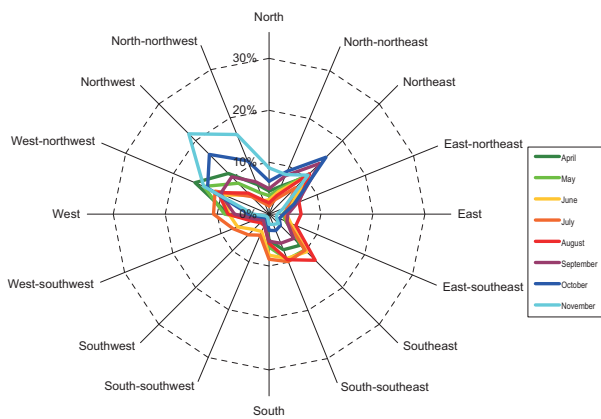


Fig. 4a Monthly wind rose (Waking hours)

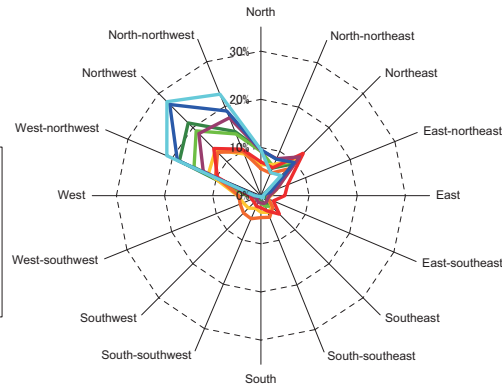


Fig. 4b Monthly wind rose (Sleeping hours)

Monthly weather data table

		April		May		June		July		August		September		October		November	
		Waking hours	Sleeping hours	Waking hours	Sleeping hours	Waking hours	Sleeping hours	Waking hours	Sleeping hours	Waking hours	Sleeping hours	Waking hours	Sleeping hours	Waking hours	Sleeping hours	Waking hours	Sleeping hours
Average temperature (°C)		17.9	14.3	21.7	18.1	24.7	22.1	28.7	25.9	29.1	26.4	26.6	23.6	21.9	18.2	16.7	13.1
Average relative humidity (%)		64	78	66	81	74	85	72	84	71	83	68	81	63	77	64	77
Average wind speed (m/s)		2.2	1.7	2.1	1.6	2.1	1.5	2.3	1.4	2.4	1.7	2.2	1.7	2.0	1.8	1.9	1.8
Wind direction	First direction	West-northwest	Northwest	West-northwest	Northwest	Northwest	Northwest	West-northwest	Northwest	Southeast	Northwest	Northwest	Northwest	Northwest	Northwest	Northwest	Northwest
	Second direction	Northwest	West-northwest	Northeast	West-northwest	Southeast	West-northwest	West	West-northwest	Northwest	Northeast	Northwest	North-northwest	Northeast	North-northwest	North-northwest	North-northwest
	Third direction	Northeast	North-northwest	Southeast	North-northwest	West-northwest	Northeast	South-southeast	North-northwest	West-northwest	North-northwest	West-northwest	West-northwest	West-northwest	West-northwest	West-northwest	West-northwest
		15%	21%	14%	19%	10%	13%	11%	13%	13%	14%	14%	18%	16%	27%	22%	28%
		11%	18%	11%	15%	10%	12%	11%	10%	11%	12%	10%	17%	15%	19%	17%	23%
		10%	14%	10%	14%	9%	11%	10%	10%	11%	10%	10%	13%	13%	19%	14%	21%

* This data was created based on the expanded AMeDAS weather data (for 20 years) from Expanded AMeDAS Weather Data 1981 - 2000 issued by the Architectural Institute of Japan (published in 2005, <http://www.metds.co.jp/>).

* This data can be used as reference materials for Section 3.1 Use and Control of Wind of Design Guidelines for Low Energy Housing with Validated Effectiveness. Permission has been obtained from the Research Committee on Environment Engineering of the Architectural Institute of Japan and Meteorological Data System Co., Ltd. to publish the weather data on the Design Guidelines for LHEVE website only (www.ijj-design.org). Please refrain from reproducing this information or employing it for other uses.

* In this data, waking hours are from 7:00 to 22:00 and sleeping hours are 23:00 to 6:00.

* For details on how to use this data and how it was created, please see "3.1 Use and Control of Wind" of Design Guidelines for Low Energy Housing with Validated Effectiveness" and p.002 - 003 of this PDF file.

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