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1. INTRODUCTION TO MALAYSIA: SOCIETY, ECONOMY, POLITICS

A federal constitutional monarchy, Malaysia consists of 13 states and 3 federal territories. Its landmass is separated into Peninsular (where the country's capitals Kuala Lumpur and Putrajaya can be found) and East Malaysia on Borneo by the South China Sea.

The population of Malaysia is estimated at 32.5 million in 2020, consisting of 29.8 million (91.7%) Malaysian citizens and 2.7 million (8.3%) non-citizens. The slight decrease in population compared to 2019 is largely due to the departure of non-citizens in the wake of the Covid-19 pandemic. The Malaysian population is made up of a wide variety of ethnic groups, with the majority (69.4%) being Bumiputras ("Son of the Soil"). 24% of the Malaysian population is under the age of 15 and 69.3% are between the ages of 15 and 64, making the average population relatively young. Due to the country's multicultural demographic, the majority of its residents grow up multilingual and speak at least two languages fluently. In large cities this generally includes English, which is the language of business throughout the country.

Malaysia ranked 55th out of 157 countries according to the World Bank's [Human Capital Index](#). In order to realize the full potential of its population, it will greatly need to make further progress in education, health and nutrition, as well as in the outcomes of social protection. Improving the quality of school education, rethinking nutritional interventions, and providing adequate social protection are therefore among the main priority areas.

Malaysia is one of the leading nations in the Southeast Asian economic area: the gross domestic product (GDP) per capita was estimated at USD 11,400 in 2021, only behind Singapore and Brunei, and has almost doubled since 2005, seeing a strong recovery from the 2020 drop to USD 10,350, and continuing its upward trajectory to reach over USD 13,270 as of April 2022. Today Malaysia can be seen as a stable emerging country with a diversified economy. In addition to a traditionally strong agricultural sector, the production and service sectors also make a large contribution to the economy today. Meanwhile, the country has become a leading exporter of electrical appliances, electronic parts, and components.

According to the World Bank, Malaysia is one of the most investment-friendly economies in the world (ranking 12th for [Ease of Doing Business in 2020](#)). This has been a major contributor to job creation and income growth. After the global financial crisis in 2009, the Malaysian economy recorded average growth rates of around 6%. However, this growth slowly flattened out over the years and was 4.3% in 2019. According to Bank Negara (Malaysia's central bank), this was the lowest economic growth since the great financial crisis and was mainly due to lower production of palm oil, crude oil and natural gas, as well as a decline in exports amid the trade war between the US and China. Due to the unstable political situation and the effects of the Covid-19 virus, the economy shrunk by -5.6% in 2020, rebounding slightly to +3.1% in 2021. The 2022 forecast by the World Bank (as of Sept 2022) is +6.4%.

In 2021, Malaysia was under a state of emergency between January to August, and a resurgence in cases prompted the government to declare a nationwide lockdown on June 1st to curb the spread of the coronavirus. The tightening of containment measures will push the country back into recession for the first half of this year. However, the year end's modest recovery was achievable due to the country's strong vaccination rollout as of July 2021. As of May 1 2022, almost 98% of the adult population, and 82% of the general population have been fully vaccinated.

The nation's borders fully reopened on April 1 2022, allowing Malaysians and international tourists quarantine-free entry, provided they have been fully vaccinated and test negative. This should lead to a strong economic recovery, as the tourism sector was one of the strongest contributors to GDP.

The current economic indicators per the Economist Intelligence Unit (EIU) forecasts (as of November 2022) are as follows:

Key indicators

	2022 ^a	2023 ^b	2024 ^b	2025 ^b	2026 ^b	2027 ^b
Real GDP growth (%)	6.0	4.0	4.5	5.3	5.1	5.0
Consumer price inflation (av; %)	3.4	2.6	1.7	1.9	2.2	2.1
Government balance (% of GDP)	-6.1	-5.6	-5.5	-5.2	-5.0	-4.5
Current-account balance (% of GDP)	1.6	1.4	1.7	1.6	1.9	1.6
Short-term interest rate (av; %)	2.4	3.4	3.5	3.5	3.5	3.7
Unemployment rate (%)	3.9	4.0	3.9	3.7	3.6	3.5
Exchange rate M\$:US\$ (av)	4.42	4.51	4.33	4.20	4.10	4.01

^a EIU estimates. ^b EIU forecasts.

A detailed statistical analysis can be found in the [Country profile Malaysia](#).

In the medium term, it is expected that Malaysia will successfully transition from an "upper middle-income economy" to a "high income economy" by 2024. According to the World Bank, Malaysia's economy will depend heavily on government measures to strengthen the private sector in the short term. Currently, the external environment makes export-oriented growth difficult, while local or investment-based expansion remains limited as the country recovers from the pandemic.

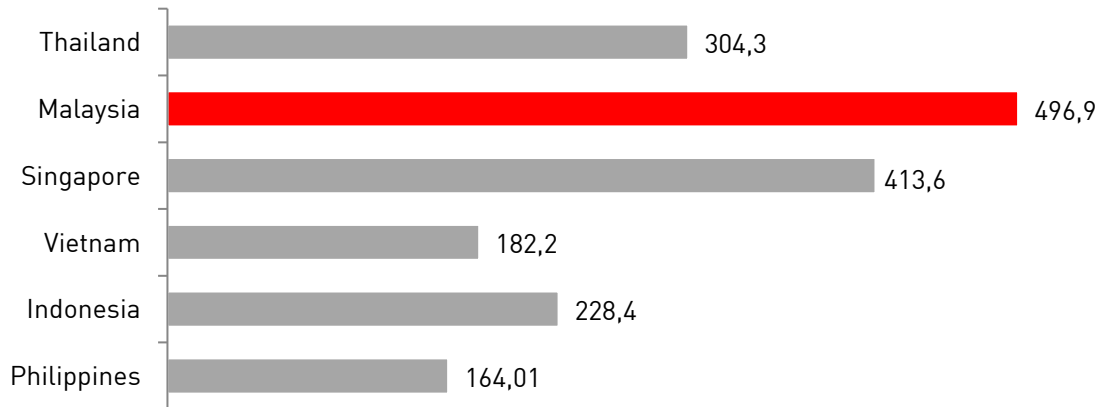
In the long run, economic growth will depend on increasing productivity levels. Although the productivity level in Malaysia has risen sharply over the past 25 years, it was still below that of several regional countries by comparison. Ongoing reform efforts are crucial.

At the political level, Malaysia is also far from stable. In 2018 the ruling coalition Barisan Nasional, which had been the dominant party, was defeated by the opposition for the first time since Malaysia's independence. This gave the country a strong, if temporary, upturn in sentiment. However, the resignation of the Prime Minister two years later, in February 2020, and that of his successor in August 2021, showed that the country still appears to be at a political impasse even after a change of government. The 15th General Election was held November 19th 2022. You can find more about the current political situation in our [Economic report Malaysia](#), as well as our [Malaysia country report](#).

2. STATUS QUO

Malaysia's Economic Relations with Austria

The importance of Malaysia for Austrian foreign trade is often underestimated and lesser known compared to other countries in the ASEAN community. In reality, however, the situation is very different, as the following graphic illustrates.



Foreign trade - Austria's exports to the most important ASEAN countries in million euros (source: Statistics Austria, 2022)

With 402.7 million euros in Austrian exports, Malaysia ranked first among the ASEAN buyer countries in 2020. Thailand was in second place with EUR 365.8 million, followed by Singapore and Vietnam. Due to the effects of Covid19, all of the countries saw a steep drop from 2019, but the recovery in 2021 was particularly promising for Malaysia: **Austrian exports to Malaysia reached 496.9 million euros**. This reflects a strong recovery with a +23.4% YoY growth and reaffirms Malaysia's position as most important buyer of Austrian goods and services in the ASEAN region. Only Singapore experienced a stronger recovery, but in terms of export volumes, still ranks after Malaysia, at 413.6 million euros. It is also important to note that some of the export goods reported for Singapore also have their final destination in Malaysia. On the contrary, exports to Thailand declined strongly, falling by 16.8% to 304.3 million euros. The rapid recovery positions Malaysia as the biggest and one of the most promising future markets for Austrian companies in the region.

Austria exports RM2.25 billion (ca. 476 M EUR) to Malaysia and imports RM1.94 billion (ca. 411 M EUR) from the country, making Malaysia one of Austria's most important Asian economic partners. The electronic components, machinery, and electrical devices are among the most traded things.

More than 50 Austrian companies have invested RM18.9 billion (ca. 4B EUR) into Malaysia, in the sectors of oil and gas, healthcare, automotive, electronics, plastic goods, and construction materials, amongst others. These companies also share their technological knowledge with local partners, with many of them functioning as regional centres for the Asia-Pacific region. In the future, there will be new investments, particularly in the food and beverage, environment, and renewable energy sectors.

3. MALAYSIA'S SUSTAINABLE BUILDING INDUSTRY

Given that the construction industry in Malaysia is responsible for a whopping 43% of total energy consumption, green construction is crucial to preserving natural habitats. Especially as the world is undergoing dramatic climate change, green buildings are urgently required to help sustain economic growth while maintaining natural ecosystems. Green buildings are intended to consume less energy and resources in order to boost worker productivity, recycle materials, and limit toxic waste disposal, while balancing the climate, tradition, culture, and surrounding areas. Therefore, it is possible to encourage a higher standard of living and sustaining the existing ecosystem on both a local and global scale. Furthermore, businesses and organisations who operate in green buildings send an essential message to the public: they are responsible, well-managed, and committed to making the future a better and greener place to live.

Malaysia has pledged to lower its carbon emissions per unit of GDP by 45% by 2030 compared to 2005 levels. **Malaysian Green Technology Corporation** (GreenTech Malaysia) is leading the charge, with a guiding document called **Low Carbon Cities Framework (LCCF)**. The important features include lowering carbon emissions by optimising energy and water consumption, as well as creating green spaces. Carbon emissions in cities will also be measured. The overall carbon reduction level will be recognised through carbon assessment performance recognition. GreenTech Malaysia and the **Ministry of Science, Technology, and Innovation (MOSTI)** hope to construct and designate 200 low carbon zones around the country by 2030, as well as at least 1,000 Low Carbon Cities Partners.

The good news is that green building is gradually becoming the norm in Malaysia, as big developers have embraced the concept of green construction for greater commercial development. The need for energy-efficient and sustainable buildings with a healthy work environment is increasing, particularly in developed and developing nations such as Malaysia. Occupants may undertake portfolio assessments to see which buildings meet carbon neutrality targets. While occupants may also evaluate the sites in order to cut transportation expenses and the carbon footprint, developers investigate these areas and track their performance against predetermined criteria to achieve the desired and presentable results.

There are now at least 389 registered **Green Building Index (GBI)** projects in Malaysia. There is no requirement in Malaysia for enterprises or occupiers to conduct assessments to determine which buildings meet carbon neutrality standards. However, multinational corporations (MNCs) are dedicated to moving into Green buildings, particularly when there are cost savings for their global operations. For example, if offices or industrial areas can be more effective in saving electricity costs, these cost savings mount up dramatically across their global branches.

Moving into a green building is a simple way for MNCs to demonstrate their commitment to the global cause of reducing carbon emissions. After all, a green building is intended to maximise energy efficiency, water efficiency, and the sustainability of construction materials. These would include reduced energy usage, decreased solar heat gain, natural lighting, and the use of renewable energy under energy efficiency, as well as rainwater harvesting, water recycling, and water-saving fixtures under water efficiency. Furthermore, there is a desire to move into buildings that meet the **WELL Building Standard**—a certified instrument for enhancing health and well-being in buildings internationally through greater quality of air, water, nourishment, light, fitness, comfort, and mind. WELL Certification is also seen favourably by MNCs, particularly when it can improve worker retention and productivity.

Malaysia Green Building Index

Sustainable building contributes significantly to Malaysia's ongoing construction boom. There are several large-scale developments that have been recently completed or are currently underway which will profoundly contribute to both the construction industry as well as the efforts to reduce ecological harm. The most widespread benchmark for green building in Malaysia is the Malaysia **Green Building Index (GBI)**, which was developed by the **Malaysian Institute of Architects (Pertubuhan Arkitek Malaysia, PAM)** and the Association of Consulting Engineers Malaysia (ACEM) and aims at increasing transparency and comparability. Apart from the GBI, other common certifications include the **Green Real Estate (GreenRE)**, or the **Leadership in Energy and Environmental Design (LEED)**, provided by the U.S. Green Building Council.

The GBI is a green appraisal instrument for buildings that is widely used in Malaysia. Its purpose is to encourage the maintenance of the built environment, as well as to serve as an awareness campaign for people who are heavily involved in the built environment sectors, such as developers, architects, engineers, planners, contractors, designers, and, most importantly, the general public, about environmental issues and the importance of environmental protection for a better future. GBI defines "green building" as "the most effective use of resources such as water, energy, and materials while minimising the impact of building on human life and the surrounding environment during the development process." All of this addresses a few key areas, including strategic location, design, structure, operation, waste disposal, and sustainability.

The **GBI rating tool** enables developers to construct a building with green characteristics such as energy efficiency, water efficiency, improved indoor environmental quality, and the use of recycled materials to lessen the environmental impact of the structure's life cycle. The GBI rating tool is notable for being specifically designed to meet Malaysia's local climate, cultural, and social demands, and it aims to create a better living environment for all through the same standard of measurement by improving the built environment to reduce its negative impact on the environment. Furthermore, GBI plays an important role in ensuring that new structures built are still appropriate for future evaluation and that old buildings are restored and improved to improve building quality. Environmental leadership will be recognised and rewarded. GBI is projected to be widely employed as the public becomes more aware of the benefits of sustainable buildings in creating a greener environment.

Procedures of Obtaining GBI Status

Before acquiring GBI status, there are various standards that must be satisfied. To begin, Green Building candidates must complete and submit the GBI application form. The following step is for the applicant to present the finalised designs of their projects, preferably before beginning construction, either directly or through a GBI facilitator who has been appointed for Design Assessment (DA). After finishing the evaluation, the GBI certifier will draught an evaluation report to submit to the accrediting panel for final approval before registering and issuing certification. After the project is completed, the Completion and Verification Assessment (CVA) will be performed within 12 months after completion or when the building's occupancy rate reaches 50%. The final GBI award will be issued only after the CVA is completed. GBI recognition comes in four varieties: GBI Platinum, Gold, Silver, and Certified ratings. The buildings must be reviewed every three years to verify that they are well-managed in order to preserve their GBI rating.

The GBI's rating system evaluates the environmental design and performance of buildings based on 6 key criteria:

- Energy Efficiency
- Water Efficiency
- Indoor Environment Quality
- Sustainable Site Planning and Management
- Materials and Resources
- Innovation

For the fulfilment of these criteria, a construction project can reach up to 100 points. Depending on the number of points collected the GBI certification – Certified, Silver, Gold, and Platinum – will be awarded.

- Certified Level (50 – 65 points)
- Silver Level (66 – 75 points)
- Gold Level (66 – 75 points)
- Platinum Level (86 – 100 points)

In appendix is a selection of some of the most notable certified green buildings and/or current construction projects. The full list of all buildings certified by the GBI is available at:

<https://www.greenbuildingindex.org/how-gbi-works/gbi-certified-buildings/>

4. MARKET ENTRY

ACTORS & INSTITUTIONS

The main players in the sustainable and green building sectors in Malaysia are the **Ministry of Water and Environment** (MOWE; KASA in Malay) and its agency **Malaysia Green Technology Corporation** (MGTC) mandated to drive the country in the scope of Green Growth, Climate Change Mitigation and Green Lifestyle initiatives. The **Malaysian Investment Development Authority** (MIDA), which takes care of financial matters and attracts investors, also promotes the development of green energy. MGTC in particular has been given the mandate to drive the country in the scopes of Green Growth, Climate Change Mitigation and Green Lifestyle.

Another important stakeholder in the Green Building sphere is the **Malaysia Green Building Council (MGBC)**, which was formerly known as the Malaysia Green Building Confederation and consists of a group of consultants, academics, and representatives from the building industry who got together to start a non-profit organisation that promotes sustainable buildings in Malaysia. The group was also backed by two professional organisations, **Pertubuhan Arkitek Malaysia (PAM)**, the national professional institute representing architects in Malaysia, and the **Association of Consulting Engineers Malaysia (ACEM)**, with the goal of consulting and cooperating with those engineers whose job is solely consultative, as well as offering facilities for government, public bodies, associations representing industry and trade, and others.

LEGISLATIONS & POLICIES

12th Malaysia Plan (2021-2025)

On 27 September 2021, the Twelfth Malaysia Plan (RMK-12) was tabled for the period of 2021 to 2025. Advancing sustainability and green growth is one of the key themes in RMK-12, where Malaysia is committed to be a carbon neutral country by 2050 at the earliest and has pledged that new coal-fired power plants will no longer be built. In implementing a low carbon economy, one of the initiatives is to ensure sustainable energy and electricity for all by formulating a comprehensive National Energy Policy from the streamlining of existing energy-related policies and increase green procurement.

National Low Carbon City Masterplan

The Malaysian government, through the Ministry of Environment and Water (KASA) released the first edition of its Low Carbon City plan in August 2021. The Nationwide Low-Carbon Community Model (NLCCM) is a national plan that promotes urban growth while lowering energy consumption and greenhouse gas (GHG) emissions. The masterplan uses the 3M approach (Measurement, Management, and Mitigation of GHG Emissions) to mitigate environmental consequences. This masterplan's target cities are 33 local governments with populations of 300,000 or more, divided into Groups 1 through 3. Group 1 cities are expected to attain carbon neutrality in their metropolitan regions by 2050.

National Energy Efficiency Action Plan

The National Energy Efficiency Action Plan which includes Sabah and Sarawak, is focusing on addressing electricity supply concerns through smart demand management. The Plan lays forth a strategy for increasing energy efficiency by pursuing the implementation of measures known as "low hanging fruits," which are beneficial to both the nation and end consumers. The plan is based on the experiences and knowledge gained through previous programmes and projects, which were conducted by numerous organisations and agencies but lacked a comprehensive framework to assure long-term sustainability.

National Energy Policy (2022-2040)

The National Energy Policy 2022-2040 was launched in September 2022, aiming to contribute to Malaysia's transition to cleaner energy, boost investment flows and advance the country's sustainable development goals. To this, Malaysia has revised upwards its national Renewable Energy (RE) capacity target to 31% from 20% by 2025. The RE contribution in the installed capacity mix is projected to increase to 40% from 31% by 2035 in the Malaysia Renewable Energy Roadmap. In addition, carbon capture, utilization, and storage technology for carbon mitigation will also be explored. The country acknowledges the need to strengthen international cooperation to ensure universal access to affordable and reliable energy.

Environmental Quality Act 1974

In the promotion of environmentally sound and sustainable development, the Government of Malaysia has established the necessary legal and institutional arrangements such that environmental factors are considered at the early stages of project planning. With reference to the licensing requirements for establishment of business/industry in the country, environmental requirements and assessment constitute the second level of approval that need to be obtained after a business or industry has been registered. The legislation that is related to the prevention, abatement, control of pollution and enhancement of the environment in Malaysia is the Environmental Quality Act, 1974. The Act restricts the discharge of wastes into the environment in contravention of the acceptable conditions

5. SUBSIDIES & FISCAL INCENTIVES

In Budget 2020, the Government had announced the extension of Investment Tax Allowance (ITA) for the purchase of green technology assets and Income Tax Exemption (ITE) on the use of green technology services and system. The ITE is also extended for company which undertakes solar leasing activity.

This is to further boost the Malaysian green economy and to attain the nation's goal to generate 20% of energy consumption from renewable sources by 2025. This is also in-line with the Malaysia's commitment to reduce 45% of Green House Gas (GHG) emission intensity by 2030. Despite the changes in governments, it was announced in Budget 2023 that these incentives would continue, with the incentives as follows:

(A) Green Investment Tax Allowance (GITA - Project)

- i. Green Investment Tax Allowance of 100% of qualifying capital expenditure incurred on green technology project for three (3) years from the date of first qualifying capital expenditure (CAPEX) incurred.
- ii. The date of first qualifying CAPEX shall not be earlier than the date of application received by MIDA.
- iii. The allowance can be offset against 70% of statutory income in the year of assessment.
- iv. Unutilised allowances can be carried forward until they are fully absorbed.

(B) Green Income Tax Exemption (GITE)

i. Services

Green Income Tax Exemption of 70% on statutory income for qualifying green services where:

- The period of incentive is for three (3) years starting from assessment year of the first invoice related to green technology services issued; and
- The date of the first invoice shall not be earlier than the date of application received by MIDA.

ii. Solar Leasing

- Green Income Tax Exemption of 70% on statutory income for solar leasing activity for a period of up to ten (10) years of assessment. This incentive will be considered based on tier as follows:

Capacity (MW)	Incentive Period
>3MW- ≤10MW	5 years
>10MW- ≤30MW	10 years

- The incentive period shall commence from the date of first invoice issued and this date shall not be earlier than the date of application received by MIDA.

For more information, please visit Malaysian Green Technology And Climate Change Corporation (MGTC) website: <https://www.mgtc.gov.my/what-we-do/green-incentives/green-investment-tax-incentives-gita-gite/>.

6. TRENDS AND OPPORTUNITIES FOR AUSTRIAN COMPANIES

COVID-19 Impact & Post-Pandemic Recovery

COVID-19 has forced Malaysia into several lockdowns, known as Movement Control Orders (MCO) since March 2020. Due to the prolonged nature of these lockdowns, the Malaysian economy was heavily impacted. In order to cushion the effects as much as possible, a total of 3 stimulus packages with a total value of RM260 billion have been announced.

Trends, Opportunities and Challenges

"Advancing sustainability" is a central element of the **12th Malaysia Plan**, which defines the country's ambitions to become carbon neutral by 2050 and places Malaysia among the first in ASEAN to support climate action. Part of these actions would be to develop sustainable buildings with energy efficient solutions, reduced carbon costs, and improved living quality. However, with a high urbanisation rate of over 76% in the country, one of the biggest challenges in the green building space is that most existing buildings were built prior to the establishment of green building standards. Intense periods of property development and subsequent lack of purchasers (either due to oversupply or unaffordability) have also led to unoccupied or abandoned housing as another large obstacle:

- According to the statistics department in June 2021, a total of 1.9 million residential units in Malaysia are unoccupied and 117 housing projects, comprising 23,562 house units are abandoned.
- An overabundance of vacant buildings can drag down property values in an area, spur vandalism and criminal activities which drain public resources as well as leaves the area less safe.
- Public and private sectors in Malaysia are increasingly trying to find ways to revive old buildings while reducing the carbon cost of buildings.

With the government's target to increase the percentage of residential, commercial, and industrial energy efficiency savings in the newly launched **National Energy Policy 2022-2040**, **retrofitting** is one of the main approaches to increase the energy efficiency savings and improve a building's indoor air quality.

In its **Budget 2022**, Malaysia detailed its plan to develop a voluntary carbon market (VCM), establishing a framework for carbon credit trading between green asset owners and other companies moving to low-carbon practises, including the construction industry (as a main polluter). However, the policies on this still remain unclear, with no official national standard for verification of carbon credit quality. The **reduction of carbon emissions in construction materials and technology** remains an important aspect to consider in all new projects and solutions for this would be welcome.

Other plans to make Malaysia a carbon-neutral nation by 2050 include:

- The allocation of RM 1 billion (approx. EUR 210 million) by Bank Negara Malaysia to match funds from participating financial institutions, is meant to encourage micro, small, and medium-sized enterprises (MSMEs) to adopt sustainable and low-carbon practises, such as the use of sustainable raw materials and renewable energy.
- Issuance of Sustainable Sukuk in Ringgit Malaysia with a maximum value of RM10 billion (approx. EUR 2.1 billion) to finance socially or environmentally responsible projects.

While the Malaysian government certainly has ambitious plans and the will to achieve them, there has been a history of problems during execution, sometimes due to mismanagement or bureaucratic changes, but for the most part, because of costs or lack of access to the right technologies at the right time. It would be in this space that Austrian companies could enter the market to offer both their solutions but also expertise and experience.

7. EVENTS AND TRADE FAIRS IN THE SECTOR

International Greentech & Eco Products Exhibition & Conference Malaysia (IGEM)

Hybrid | 11 Oct 2023 – 13 Oct 2023

Note: IGEM is South East Asia's largest trade event for green technologies and eco solutions, and is held annually. The 2021 edition is held online over 6 months, with the 2022 edition expected in October 2022. IGEM is a platform for solution providers and green energy businesses to tap into the fast expanding ASEAN market by showcasing the latest innovations to policy makers, government organisations, investors and the mass market.

ARCHIDEX 2023

Hybrid | 26 June 2023 – 29 June 2023

Note: ARCHIDEX will be bridging industry professionals with world-class architects, influential speakers, and exhibitors to gain insights on current developments, is an annual industry trade event that features prominently on the region's trade calendars for a global community of architecture and building professionals. It will feature Floor & Wall, Doors, Glass & Windows, Building Materials, Office Furniture, lighting, Interior, etc.

Events of Außenwirtschaftscenter Kuala Lumpur

Please visit <https://wko.at/aussenwirtschaft/my> -> **Veranstaltungen** for more details on the event(s) below.

Workshop about Timber Construction

Physical | Feb/March 2023

Note: Advantage Austria Kuala Lumpur (ACKL) will hold a workshop with discussions and corporate visits to potential local collaborators and project partners in the field of sustainable construction. This session will also solicit feedback on future initiatives where Austrian expertise would be required.

8. CONTACTS – MINISTRIES, AGENCIES & ASSOCIATIONS

Malaysian Investment Development Authority (MIDA)

MIDA is the government's principal agency to oversee and drive investment into the manufacturing and services sectors in Malaysia. MIDA assists companies which intend to invest in the manufacturing and services sectors, as well as facilitates the implementation of their projects. The services provided by MIDA include providing information on the opportunities for investments, as well as facilitating companies which are looking for joint venture partners. They also evaluate the following applications for projects in the manufacturing sector and selected services sub-sectors: Manufacturing licenses, Tax incentives, Expatriate posts, and Duty exemptions.

Malaysian Green Technology and Climate Change Centre (MGTC)

The Malaysian Green Technology and Climate Change Centre (MGTC) is an agency of the Ministry of Environment and Water (KASA) mandated to drive the country in the scope of Green Growth, Climate Change Mitigation and Green Lifestyle. MGTC implements initiatives and programs that provide specific details in achieving the long-term reduction of greenhouse gas emissions by 45% based on Gross Domestic Product (GDP) by 2030 (from 2005), increasing the rate of contribution to GDP from green technology and the generation of 230,000 green jobs.

Malaysia Green Building Council (MGBC)

Malaysia Green Building Council (formally known as Malaysia Green Building Confederation (MGBC)) started in May 2007, when a group consultant, academia and representatives from the building industry met to initiate a non-profit making organisation to promote sustainable buildings in Malaysia. The MalaysiaGBC is supported by the professional, industrial and government sectors. It is well poised to lead Malaysia's building industry in embracing responsible measures that would help realise energy savings, water conservation, a healthier indoor environment, better public connectivity, recycling of valuable resources, and provision of greenery in developments.

Federation Malaysia Manufacturer (FMM)

The organisation was previously known as the FMM-Automation Technology Industry Group (FMM-ATIG) and operated under the auspices of the Federation of Malaysian Manufacturers to promote the advancement of automation technology in Malaysia, to serve as a bridge between the government and the industry, and to build a cohesive automation technology community. FMM also provides a good

Standards and Industrial Research Institute of Malaysia (SIRIM)

SIRIM is Malaysia's leading industrial research and technology organisation, entirely owned by the Minister of Finance Incorporated. SIRIM is mandated as the machinery for research and technology development, as well as the national champion of quality, with over forty years of experience and knowledge. SIRIM has always played an important role in the growth of the country's private sector, focusing on developing new technologies and advancements in the manufacturing, technology, and services industries by using their skills and knowledge base.

Selangor Human Resource Development Centre (SHRDC)




On February 14, 1992, the Selangor Human Resource Development Centre was founded through a tripartite agreement between the government and industry. It is ISO certified, non-profit, and award-winning talent and skills development centre. By delivering relevant industry training, the goal is to correctly prepare Malaysians to be a sustainable pool of highly trained, innovative, and adaptable workers for Malaysia's successful transition into a digital economy for firms and businesses. Creating a path for filling the talent shortage and narrowing the skills gap for new and existing talent.

Penang Skills Development Centre (PSDC)

The PSDC (Penang Skills Development Centre) was founded in 1989 and is Malaysia's first tripartite, industry-led skills training and education centre. The PSDC has evolved exponentially since its foundation to become the country's foremost learning institution, dedicated to meeting the urgent human resource demands of the business sector as well as supporting and strengthening corporate requirements. It has received national and worldwide attention as a truly successful example of collaborative learning and a model institution for human resource development that may be replicated both within and outside of Malaysia. In order to enable industry growth and development, the PSDC implemented its Industry 4.0 initiative in 2016, a plan that supports Malaysia's new phase of industrial revolution. To meet the industry's current needs and demands, the PSDC will expand its role and gear toward becoming the Centre of Excellence for Industry 4.0 in Penang and Malaysia by providing leadership, the right platform for learning best practises, and talent development support through its high-end Shared Services facilities.

9. APPENDICES

CERTIFIED GREEN BUILDING IN MALAYSIA

GBI Certified Level	
<p>Yoo8 Serviced by Kempinski – 8 Conlay, Kuala Lumpur</p>  <p>Source: https://www.iproperty.com.my/guides/certified-green-buildings-malaysia/</p>	<p>In the middle of Kuala Lumpur’s Golden Triangle and the KLCC area, the Yoo8 twin towers will reshape the city’s skyline. A particular feature of the development is its suspended green sky bridge – a multi-tiered “tropical” park in the sky that draws inspiration from the lush foliage of Malaysia’s rainforests.</p> <ul style="list-style-type: none"> • Green building certification: GBI Certified, GreenRE & LEED • Developer: KSK Land • Type: Serviced Residential, Mixed Development • Built-up: 705 sq ft – 1328 sq ft • Location: Kuala Lumpur • Year of completion: 2022
<p>Ken Rimba – Shah Alam</p>  <p>https://gowhere.my/info/ken-rimba-condominium-1/</p>	<p>As one of Malaysia’s first green townships, Ken Rimba incorporates plenty of greenery and makes use of heat-reflective paint, a cross ventilation design, and a rainwater harvesting system that will be used for landscape irrigation and general facilities use.</p> <ul style="list-style-type: none"> • Green building certification: GBI Certified • Developer: KEN Holdings Berhad • Type: Freehold condominium • Built-up: 1119 sq ft • Location: Shah Alam, Selangor • Year of completion: 2012
<p>Leisure Farm Resort – Iskandar Malaysia</p>  <p>https://malaysia.news.yahoo.com/experience-13-gbi-certified-townships-214305600.html</p>	<p>Leisure Farm is a luxury eco-development that has won several awards, including the CNBC Asia & Pacific & International Property Awards and FIABCI Malaysia Property Awards and is the first certified green development in Iskandar.</p> <ul style="list-style-type: none"> • Green building certification: GBI Certified • Developer: Mulpha International Berhad • Type: Bungalows, semi-detached homes and townhouses • Built-up: 3721 sq ft – 4800 sq ft • Location: Iskandar Malaysia, Johor • Year of completion: 2025

Residensi Allevia – Mont Kiara



<https://www.iproperty.com.my/guides/certified-green-buildings-malaysia/>

Located next to the central business district of Mont Kiara, the development maximises the effective use of resources like electricity and water, as well as the reduction of carbon emissions.

- Green building certification: GBI certified, GreenRE Gold Provisional Certification
- Developer: UEM Sunrise Berhad
- Type: Condominium
- Built-up: 1,703 sq ft – 2,634 sq ft
- Location: Kuala Lumpur
- Year of completion: 2025

Lam Soon Edible Oils Distribution Centre – Seberang Perai



<https://www.hagergroup.com/en/detail-page/1024-1343.htm?lang=en&element=88307>

Thanks to 33% savings in potable water consumption through rainwater harvesting and 40% energy consumption savings due to natural daylight penetration and natural ventilation, the Lam Soon Edible Oils Distribution Centre is the first GBI industrial certified distribution centre in Malaysia

- Green building certification: GBI Certified
- Location: Seberang Perai, Pinang
- Year of completion: 2011

MGTC Green Energy Office (GEO) Building



<https://www.mgtc.gov.my/who-we-are/green-energy-office-building/>

The building serves as the headquarters of the Malaysian Green Technology and Climate Change Corporation (MGTC), which is an agency of the Ministry of Environment and Water (KASA), and is the winner of the 2009 ASEAN Energy Award.

- Green building certification: GBI Certified
- Type: office building
- Built-up: 4,200 m²
- Location: Bandar Baru Bangi, Selangor
- Year of completion: 2007

GBI Silver Level

Bandar Rimbayu Township – Telok Panglima Garang



<https://rimbayu.ijmland.com/home>

Indoor ventilation, solar-powered water heaters and rain harvesting systems help the development in reducing its ecological footprint.

- Green building certification: GBI Silver
- Developer: IJM Land
- Type: Two-storey linked homes, semi-detached homes
- Built-up: Various
- Location: Telok Panglima Garang, Selangor
- Year of completion: Various completion dates

Edelweiss SOFO & Serviced Residences @ Tropicana Gardens



<https://www.iproperty.com.my/guides/certified-green-buildings-malaysia/>

Amongst the green innovations of the Edelweiss SOFO & Serviced Residences are the use of low VOC paint, the insulated RC flat roof which lowers heat transmission into the building, Low-E glass façade to keep the building cool, and EV chargers for electric cars.

- Green building certification: GBI Silver, GreenRE Silver Provisional Certification
- Developer: Tropicana Corporation Berhad
- Type: SOFO & Serviced Residences
- Built-up: SOFO 452 sq ft – 858 sq ft; Serviced Residences 556 sq ft – 1,111 sq ft
- Location: Petaling Jaya, Selangor
- Year of completion: 2024

KAIA Heights – Taman Equine, Seri Kembangan



<https://www.kaiaheights.com/>

The conservation of some existing forestry from the site, utilisation of compost recycled from horticulture waste, and the elevated car park for full natural ventilation contribute to the project's green character.

- Green building certification: GreenRE Silver Provisional Certification
- Developer: UEM Sunrise Berhad
- Type: Condominium
- Built-up: 972 sq ft – 1437 sqft
- Location: Seri Kembangan, Selangor
- Year of completion: 2025

SouthPlace Residences, Tropicana Metropark



<https://www.iproperty.com.my/new-property/property/subang-jaya/residences-south-tropicana-metropark/new-6098/>

SouthPlace Residences excels by its use of green components, such as environmentally-friendly products used in its construction, water-efficient fittings, lifts installed with regenerative features, effective sound insulation, natural ventilation, eco-friendly paint, and waste recycling.

- Green building certification: GBI Silver, GreenRE Bronze Provisional Certification
- Developer: Tropicana Corporation Berhad
- Type: Serviced Residences
- Built-up: 500 sq ft and 700 sq ft
- Location: Subang Jaya, Selangor
- Year of completion: 2024

The Tropika – Bukit Jalil



<https://www.iproperty.com.my/guides/certified-green-buildings-malaysia/>

Nestled between two green lungs, the Bukit Jalil Golf and Country Resort and Bukit Jalil Recreational Park feature a large park simulating a forest canopy where the highest branches of the trees avoid contacting one another, creating channel-like gaps.

- Green building certification: GBI Silver, GreenRE Bronze Provisional Certification
- Developer: Berjaya Land Berhad
- Type: Mixed Development
- Built-up: 732 sq ft – 1,318 sq ft
- Location: Kuala Lumpur
- Year of completion: 2023

klia2 Terminal



<https://says.com/my/news/klia-2>

As the first airport terminal in Southeast Asia to be awarded the Gold LEED green building accreditation, klia2 features a rainwater harvesting system that gathers rainwater to be processed, saving the airport around 9% in water use (or RM215,000 annually), low emissivity glass, high solar reflecting roof, LED lighting, jet diffusers, and variable air volume cooling which have resulted in a 7% lower power use between 2015 and 2016.

- Green building certification: GBI Silver, LEED Gold
- Location: Sepang District, Selangor
- Year of completion: 2011

Sunway City Iskandar Puteri

Sunway City Iskandar Puteri is a smart city few kilometres from Singapore and is designed to balance urban development and nature. It is one of the first comprehensive developments in Johor to be certified by the International Green Building



<https://www.greenbuildingindex.org/portfolio/sunway-city-iskandar-puteri/>

GBI Gold Level

Petronas Twin Towers



<https://www.greenbuildingindex.org/portfolio/petronas-twin-towers/>

PJ Midtown – Petaling Jaya



<https://www.propsocial.my/developments/pj-midtown-5153>

Index. Additionally, it was recently awarded the Best Southern Star Development at the StarProperty Awards 2020.

- Green building certification: GBI Silver
- Location: Iskandar Puteri, Johor
- Year of completion: starting from 2014

The Petronas Twin Towers in the Kuala Lumpur City Center are not only the former world's tallest towers and one of Malaysia's most recognized landmarks but also set new standards in respect to ecological sustainability.

- Green building certification: GBI Gold
- Location: Kuala Lumpur
- Year of completion: 1996

The development decreases its ecological footprint by its PV system on the roof, high-performance glass to reduce heat gain, high efficiency LED light fittings, a rainwater harvesting system, and its close proximity to public transportation, facilities, and community amenities. Residents can also plant their own herbs in a small garden.

- Green building certification: GBI Gold Provisional Certification
- Developer: IOI Properties & Sime Darby Brunfield
- Type: Mixed-Development
- Built-up: 1,120,236 sq ft (gross floor area [GFA])
- Location: Petaling Jaya, Selangor
- Year of completion: 2019

DiGi – Shah Alam



<https://www10.aeccafe.com/blogs/arch-showcase/2014/03/29/digi-technology-operation-centre-in-shah-alam-selangor-malaysia-by-t-r-hamzah-yeang-sdn-bhd/>

The DiGi data centre is the first data centre in Malaysia to be awarded the GBI standard. It was designed to reduce energy usage, especially as data centres traditionally consume large amounts of energy. The structure utilises eco-friendly carpets and solar reflective roof paint coating and is built with a steel formwork system to reduce timber usage.

- Green building certification: GBI Gold
- Location: Shah Alam, Selangor
- Year of completion: 2010

Gamuda Cove Core Business District



<https://www.greenbuildingindex.org/portfolio/gamuda-cove-core-business-district/>

Gamuda Cove is a large township development that shall provide new living space, create jobs and respect the environment.

- Green building certification: GBI Gold
- Location: Kuala Langat District, Selangor
- Year of completion: Property launches are progressively slated for completion in 2021. The entire development will be completed over a period of 20 years

GBI Platinum Level

Tun Razak Exchange (TRX) – Kuala Lumpur



<https://grimshaw.global/projects/master-planning/tun-razak-exchange-master-plan/>

Located in the Kuala Lumpur business district, this massive development is the first township in Malaysia which has achieved the platinum GBI rating. Once finished, the complex will strictly adhere to its zero-waste policy and feature a green lung right in the heart of the city.

- Green building certification: GBI Platinum, LEED Gold
- Developer: TRX City Sdn Bhd
- Type: Financial district comprising offices, residential towers, hotel and retail
- Built-up: 21 million sq ft (GFA)
- Location: Kuala Lumpur
- Year of completion: Partially completed, with TRX Residences to be completed by 2023

Jasin Hospital – Melaka



https://ms.wikipedia.org/wiki/Hospital_Jasin

The Jasin Hospital is the first hospital building in the world to achieve the Platinum rating for LEED and the first in Malaysia for a government building. Its key green features include rainwater management, an indoor air quality management programme, and optimised energy performance.

- Green building certification: LEED Platinum
- Location: Melaka, Melaka
- Year of completion: 2004

Menara Kerja Raya – Kuala Lumpur



<https://www.greenbuildingindex.org/portfolio/menara-kerja-roya/>

The Menara Kerja Raya is a 37-storey high rise government-owned and occupied tower and the first government building to achieve the platinum GBI rating. Additionally, the design of the tower which reduces solar heat gain, alongside its efficient lighting design, its ability to treat wastewater from washbasins, floor traps, and ablution which can be reused for toilet flushing and landscape irrigation and its energy efficiency also helped the tower winning the ASEAN Energy Awards Green Building category in 2016.

- Green building certification: GBI Platinum
- Location: Kuala Lumpur
- Year of completion: 2015

Masjid Cyberjaya



<https://www.youtube.com/watch?v=Ni9yX2CBKMK>

This modern, futuristic Mosque reduces energy losses to a minimum.

- Green building certification: GBI Platinum
- Location: Cyberjaya, Selangor
- Year of completion: 2015

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