ELEVATING LIVES (ENVIRONMENT)

ROLINTAS is committed to achieving a balance between urban development and environmental sustainability. To achieve this objective, we have designed and developed efficient highways that reduce travel time, decreasing the overall carbon footprint associated with transportation. Our aim is to provide efficient travel routes while promoting environmental sustainability. As part of our sustainability strategy, we are transitioning to renewable energy sources to reduce our dependence on non-renewable energy. The Group's initiatives on Greenhouse Gases & Climate Action represent a strategic shift aimed at significantly minimising our Greehhouse Gases (GHG) Emissions. This positions PROLINTAS as a leader in sustainable energy practices within the highway infrastructure sector.

We are steadfast in our commitment to resource conservation and advancing a circular economy. Our initiatives are strategically focused on minimising material usage and the consumption of natural resources while promoting recycling and waste reduction. These efforts are integral to our broader sustainability strategy, which education. aims to increase the use of Sustainable Materials in construction and maintainance work, and enforce more effective Water Management and **Waste Management**. We recognise the importance of **Biodiversity** preservation in our commitment to environmental stewardship. We carefully plan and manage our highway infrastructure to ensure coexistence with the natural environment, which is necessary for preserving the rich tapestry of life that thrives alongside our roads. By protecting and nurturing the ecosystems around our highways, we contribute to maintaining the ecological balance and the diversity of life in these areas.

Our dedication to promoting sustainable development in all aspects of our operations is an essential aspect of our mission at PROLINTAS. We continue to work towards a sustainable future for all, and our commitment to environmental responsibility is crucial to that mission.

6 CLEAN WATER AND SANITATED

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OLINTAS nurtu of eco-conscious leaders hrough interactive sustainability ractices and environmental

15 million

MATERIAL MATTERS

PROLINT GROUP OF COMPAN





CO2

SUSTAINABLE MATERIALS



WATER MANAGEMENT





BIODIVERSITY

We are focused on harnessing sustainable energy, exercising prudent water use, and integrating environmentally sound materials, fostering circularity and biodiversity to protect ecosystems and improve community wellbeing, thus navigating towards a sustainable and resilient future for all.

NAVIGATING THROUGH 2023

MATTERS	ISSUES & CONCERNS	RISKS	OPPORTUNITIES	PROGRESS IN 2023
GREENHOUSE	Regulatory Compliance: Navigating an increasingly complex regulatory landscape concerning GHG emissions.	Financial Exposure: Facing potential financial liabilities from non- compliance with GHG regulations and carbon pricing mechanisms.	Innovation in Operations: Implementing innovative technologies to reduce GHG emissions, leading to improved efficiency and cost savings.	Refer to page 170
GASES & CLIMATE ACTION	Operational Impact: Addressing the carbon footprint in highway operations and infrastructure maintenance. Stakeholder Expectations: Meeting the growing expectations for environmental responsibility from investors, customers, the community and other stakeholders.	Infrastructure Vulnerability: Risks to highway infrastructure from extreme weather events exacerbated by climate change. Reputational Damage: Risk of reputational harm due to perceived inaction or insufficient measures to manage GHG emissions and environmental impact.	Strategic Partnerships: Collaborating with environmental organisations and industry partners to develop climate action initiatives. Market Differentiation: Enhancing brand reputation and competitive advantage by demonstrating leadership in climate action and sustainability efforts.	
SUSTAINABLE MATERIALS	Supply Chain Complexity: Securing a consistent supply of high-quality sustainable materials. Cost Management: Balancing the higher costs of sustainable materials	Market Availability: Facing risks associated with the limited availability of specific eco-friendly materials. Infrastructure Compatibility: Potential risk of sustainable materials not	Innovation Leadership: Leading the industry by adopting new sustainable materials and practices, setting a standard for others to follow. Operational Savings:	Refer to page 184
	with budget constraints. Technological Adaptation: Adapting to new technologies and materials that meet sustainability criteria without compromising on performance.	meeting the long-term durability and safety standards of traditional materials. Investment Recovery: The risk that the higher initial investment in sustainable materials may not yield the expected	Long-term cost savings and operational efficiencies from the use of durable, low- maintenance sustainable materials. Brand Enhancement: Strengthening the brand and reputation by	
		long-term cost savings or environmental benefits.	demonstrating a commitment to sustainability and corporate social responsibility.	
₩ATER	Resource Scarcity: Managing the balance between operational water needs and the conservation of this limited resource, especially in regions facing water scarcity.	Climate Variability: Dealing with the unpredictability of water supply due to climate change, which could lead to droughts or floods affecting highway operations.	Innovative Recycling: Implementing cutting-edge water recycling and rainwater harvesting techniques to reduce dependency on freshwater supplies.	Refer to page 198
MANAGEMENT	Quality Control: Ensuring the quality of water is not compromised by highway runoff which may contain pollutants, affecting local ecosystems and water sources.	Regulatory Changes: Keeping abreast of and complying with strict environmental regulations related to water usage and conservation to avoid fines and operational interruptions.	Sustainable Operations: Positioning the company as a leader in sustainable water management within the industry, enhancing corporate reputation and stakeholder trust.	
	Infrastructure Impact: Addressing the impact of large-scale water usage on local infrastructure, including the potential for depletion and strain on community resources.	Reputational Damage: Potential for negative public perception if water management practices are deemed unsustainable or harmful to the environment.	Community Engagement: Engaging with local communities to implement joint water conservation initiatives, fostering goodwill and corporate-community relations.	

Overview



NAVIGATING THROUGH 2023

MATERIAL MATTERS	ISSUES & CONCERNS	RISKS	OPPORTUNITIES	PROGRESS IN 2023
WASTE MANAGEMENT	 Volume Management: Handling the large volume of waste generated from construction, maintenance and daily operations without harming the environment. Hazardous Materials: Dealing with the safe disposal of hazardous waste that could pose a risk to human health and the natural environment. Public Cooperation: Ensuring road users and employees follow proper waste disposal and recycling practices to maintain cleanliness and sustainability. 	Non-Compliance: Potential for regulatory non-compliance leading to legal penalties and increased scrutiny from environmental agencies. Environmental Impact: Risk of pollution from improper waste management practices, impacting local ecosystems and biodiversity.	 Innovative Recycling: Developing advanced recycling programmes that transform waste into resources, promoting a shift towards a circular economy. Community Engagement: Partnering with local communities and businesses to foster a shared responsibility for waste reduction and management. Sustainability Leadership: Establishing the company as an industry leader in sustainable waste management practices, enhancing brand value and stakeholder trust. 	Refer to page 204
BIODIVERSITY	Habitat Disruption: Construction and expansion activities may disrupt local habitats, affecting flora and fauna diversity along the highways. Pollution:	Regulatory Compliance: Potential regulatory risks associated with non- compliance to environmental laws protecting biodiversity. Reputational Damage:	Ecological Enhancement: Opportunities to enhance local ecosystems through green infrastructure, such as wildlife crossings and native landscaping. Sustainability Leadership:	Refer to page 210

Potential for pollution from highway runoff, which can negatively impact nearby ecosystems and biodiversity.

Public perception of the company's impact on local ecosystems could affect its reputation among environmentally-conscious stakeholders.

Financial Implications:

Financial risks linked to biodiversity loss, including the cost of remediation, habitat restoration, and potential fines for environmental damage. Positioning the company as a leader in environmental stewardship and sustainable practices.

Community Engagement:

Engaging with local communities and environmental organisations to collaborate on conservation projects, enhancing the company's reputation.









HIGH IMPORTANCE MEDIUM IMPORTANCE LOW IMPORTANCE

SIGNIFICANCE

t PROLINTAS, we prioritise the management of GHG emissions as an integral aspect of our business operations. Our commitment to sustainability and environmental stewardship drives us to strategically manage GHG emissions, contributing to the broader goal of mitigating global warming and its detrimental effects on ecosystems and biodiversity.

Recognising our responsibilities as highway operators, we are acutely aware of the impacts of climate change. Extreme weather events, particularly intense rainfall, pose immediate challenges to our operations and increase highway safety hazards. These conditions can precipitate dangerous situations, endangering road users and our personnel. Through proactive adaptation and mitigation efforts, we aim to minimise these risks, safeguard our infrastructure, and ensure the safety and wellbeing of all stakeholders who rely on our highways.

OUR APPROACH GREENHOUSE GASES & CLIMATE ACTION

O1 CARBON MANAGEMENT

CLIMATE ACTION

02

03

ALIGNMENT TO THE TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES (TCFD) Our comprehensive strategy in addressing Greenhouse Gases & Climate Action is segmented into three interconnected pillars, each key to this material matter.

01: This foundational element focuses on the reduction of GHG emissions. Our efforts here reflect our deep commitment to addressing environmental challenges head-on.

02: The second pillar is dedicated to proactive measures-both adaptations and innovations -designed to lessen the impacts of climate change. This showcases our forward-thinking approach to safeguarding our infrastructure against climate variability.

03: The third pillar emphasises incorporating the TCFD framework into our climate action strategy. This alignment demonstrates our commitment to best practices in climate and environmental reporting, ensuring our strategies are transparent and accountable.



01

CARBON MANAGEMENT

n 2022, our partnership with Malaysian Green Technology and Climate Change Corporation (MGTC) marked the beginning of an extensive initiative to map out our GHG emissions across Scope 1, 2 and 3, aligning with the stringent criteria of the GHG Protocol framework. This collaboration led to the critical establishment of 2019 as our baseline year, providing a definitive starting point for understanding the landscape of our GHG emissions.

This foundational work paved the way for developing a targeted Carbon Reduction Strategy for short-to-mediumterm goals, enabling our ultimate ambition of achieving a Net Zero Emissions Goal. This initiative represents a significant milestone in our quest for environmental sustainability and highlights our unwavering commitment to sustainable practices and the principles of ethical corporate governance.

> In 2022, we embarked on a crucial journey towards sustainability by establishing key initiatives and processes to monitor and track GHG emissions across our operations.

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OUR PERFORMANCE



OVERVIEW OF PROLINTAS' GHG EMISSIONS PROFILE

CARBON FOOTPRINT & INTENSITY ANALYSIS (2019-2023)



PROJEK LINTASAN KOTA HOLDINGS SDN BHD (PROLINTAS)

172 PROJEK LINTASAN KOTA HOLD SUSTAINABILITY REPORT 2023

CO²

ELEVATING LIVES GREENHOUSE GASES & CLIMATE ACTION

THE ANALYSIS

xpanding upon our initial GHG emissions profile, our strategy strongly emphasises managing Scope 2 emissions, which account for 38% of our total GHG emissions on a five-year average. Given their direct link to the energy we procure and use, addressing Scope 2 emissions is pivotal.

Further analysis reveals that a significant portion of our Scope 3 emissions, constituting 44% on a five-year average, stems from fuel and energy-related sources. Recognising that Scope 2 and Scope 3 emissions constitute 82% of our overall GHG footprint, developing a comprehensive Energy Management strategy is imperative.

This strategy is crucial for our carbon reduction efforts and pursuit of a netzero ambition, focusing on reducing energy consumption, enhancing energy efficiency, and transitioning to renewable energy sources. Through these targeted measures, we remain dedicated to environmental stewardship and actively contribute to the global fight against climate change.

PROLINTAS' Renewable Energy and Innovation Department is powering up progress in the transition to Green Energy.

Pn. Farah Iylia Nordin Manager, Renewable Energy & Innovation Overview

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ENERGY MANAGEMENT INITIATIVES

THE CARBON REDUCTION STRATEGY

he development and reinforcement of the Energy Management Framework and Strategy are imperative for the Group, given that analysis over the past five years has shown that 82% of emissions originate from direct energy consumption and its related-activities.

The Mechanical, Electrical and Electronics Department has meticulously outlined a framework and strategy to address this significant portion of our GHG footprint. This approach is aligned with our goal to effectively managing our environmental impact, as detailed in the initiatives highlighted in the accompanying infographic.



ELEVATING LIVES GREENHOUSE GASES & CLIMATE ACTION





ELEVATING LIVES **GREENHOUSE GASES & CLIMATE ACTION**

ADOPTION OF RENEWABLE ENERGY SOURCES

e are adopting solar photovoltaic (PV) systems to harness the power of the sun and generate clean, renewable energy. These systems are primarily installed on the roofs of our toll plazas. The following section delineates the current status and future plans for our solar rooftop project, extending until 2030.

	EXISTING	PLANNED	SYSTEM	POTENTIAL ELECTRICITY GENERATION	POTENTIAL EMISSIONS REDUCTION
HIGHWAY	PV	PV	SIZE (kWp)	(kWh/year)	(tCO ₂ e)
GCE	1	2	662	773,216	603
ALKSA	1	1	500	584,000	456
LEBUHRAYA KAJANG SILK HIGHW	_{AY} 0	4	529	617,872	482
A DASH	3	0	308	359,744	281
	3	0	78	91,104	71
TOTAL	8	8	2,297	2,425,936	1,893

Conversion of kWp to kWh/Year: System Size (kWp) x Average Peak Sun Hours (3.2) x 365 Days Conversion of Electricity (kWh) to CO2e (Malaysia): kWh x 0.78 kg

ENERGY USAGE AND INTENSITY (PER MILLION TRAFFIC VOLUME)

TOTAL ENERGY USE (MWh)¹



purchased electricity and fuel consumption, is based on NEB 2016 Conversion Coefficients and Equivalence.

KEY HIGHLIGHTS

8% Reduction in Energy Intensity based on the 2019 baseline.

In 2023, our Energy Intensity continued to exhibit a downward trajectory, reflecting a decrease of 1% from 2022.

Moreover, compared to the baseline year 2019, we have achieved a noteworthy reduction of 8% in intensity.

This decline can be attributed to the effective implementation of our energy reduction initiatives.

¹ The conversion for Energy Use, which comprises

ENERGY CONSERVATION PROGRAMMES AND AWARENESS CAMPAIGNS

In our ongoing efforts to promote energy conservation and sustainable behaviours among our employees and stakeholders, we have coordinated campaigns and competitions to encourage adopting environmentally-friendly practices in the workplace and at home. These endeavours are designed to foster a culture of environmental responsibility within our organisation and the communities we are dedicated to serve.



ELEVATING LIVES

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CLIMATE ACTION

02

ur Climate Action approach is centered on proactive adaptations and strategic responses aimed at mitigating the effects of climate change on our highway operations.

One of our primary areas of focus is flood mitigation and slope stability. We have an effective stormwater management complemented by the deployment of remote slope and rain monitoring sensors.

This comprehensive approach enables us to anticipate and effectively respond to flood and slope-related risks, ensuring continued safety and reliability of our highways, even in extreme weather conditions.

KEY HIGHLIGHT 2023 Construction of 518 m³ of an On-site Detention Pond at KAJANG S



PROLINTAS significantly enhanced its stormwater management capabilities by adding an on-site detention pond at Kajang SILK. This expansion increased our stormwater handling capacity by 518 m³, elevating our overall capacity to 59,730 m³.

This advancement underscores our commitment to environmental stewardship and operational excellence.

DETENTION AND RETENTION PONDS

In response to the escalating frequency and intensity of extreme weather events, such as floods, exacerbated by climate change, we are proactively implementing measures to mitigate this climate-related risk.

Understanding the potential implications for our business and the communities we support, we have initiated a comprehensive mitigation strategy. This strategy focuses on the development of advanced stormwater management infrastructure and the expansion and improvement of our road drainage systems. Our goal is to reduce the likelihood of flooding and bolster the resilience of our infrastructure against the dynamic challenges posed by the changing climate.

LOCATION AND CAPACITY C	2023 OF EXISTING DETENTION AN	ID RETENTION PONDS	
HIGHWAY	DETENTION POND CAPACITY (m ³)	RETENTION POND CAPACITY (m ³)	Sustainabili at PROLINTAS
	20,473	3,814	Our
	12,937	8,947	Materiality Matters
	518	0	Acceleratin Advanceme
Q DASH	800	11,190	
Q AGCE	1,050	0	Elevating Lives
TOTAL	35,778	23,951	Converging Communitie
The detention pond at GCE serves as an effective stormwater management system, mitigating flood risks by temporarily holding excess water runoff and allowing it to gradually dissipate, thus safeguarding infrastructure and ensuring road safety for commuters.			Data & Assurance

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SMART SLOPE MONITORING SYSTEM

In 2023, our organisation took a significant step forward in enhancing the safety and resilience of the Kajang SILK and SUKE highways, bordered by hilly slopes, by deploying an advanced Smart Slope Monitoring System.



PROACTIVE ALERTS FOR SLOPE STABILITY RISKS

This innovative system is designed to provide pre-emptive warnings of potential slope failures by utilising cutting-edge sensors capable of detecting critical changes in rainfall patterns and soil movement. The system employs predefined parameters to initiate timely remedial measures, thereby mitigating risk and ensuring the safety of these vital infrastructures.



ENHANCED SAFETY

Slope Monitoring Systems are pivotal in bolstering road safety by providing early warnings of potential landslides or slope failures. This capability is instrumental in significantly mitigating accident risks, safeguarding motorists' lives and ensuring uninterrupted travel.



PREVENTIVE AND TIMELY MAINTENANCE

The early detection features of these systems are critical in identifying signs of potential slope instability. This foresight allows for timely maintenance and repair measures, effectively preventing extensive and costly damage to the highway infrastructure.



EFFICIENT TRAFFIC MANAGEMENT

Leveraging real-time data on slope conditions, these systems facilitate the implementation of dynamic traffic management strategies. This includes enacting immediate road closures or implementing rerouting protocols, thereby minimising exposure to hazardous conditions.

The system has been designed with two rain gauges and ten tilt sensors, strategically positioned on the slopes adjacent to Kajang SILK. An additional ten tilt sensors have been deployed on the Bukit Saga slope next to SUKE,

guaranteeing comprehensive coverage and safeguarding against the risks of slope failure.



ELEVATING LIVES GREENHOUSE GASES & CLIMATE ACTION

marking an advancement in our commitment to climate resilience. We are in the preliminary stages

risks associated with climate change. This process is being conducted alongside identifying opportunities that

align with our operational goals and values, all under the structured guidance of TCFD. This proactive approach highlights our dedication to integrating climate resilience into our strategic planning, ensuring we remain at the

of a comprehensive assessment to understand the potential impacts of both physical and transitional

e are proud to announce our inaugural alignment with the recommendations set forth by the TCFD,

ALIGNMENT TO THE TASK

FORCE ON CLIMATE-

RELATED FINANCIAL

DISCLOSURES (TCFD)

03

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	TCFD PILLARS	WHERE WE ARE TODAY	PRIORITIES FOR FY2024 TO FY2027	Guiding
	GOVERNANCE Disclose the organisation's governance around climate-related risks and opportunities.	 Board Oversight Periodic discussions by the Board on climate-related matters. Management Oversight Review of climate risks as part of the Group's Enterprise Risk Management. Working Committees Discussions and executions of climate-related matters. Awareness and Training Programmes For all employees. 	 Continue to strengthen and improve climate risk governance. Continue enhancing internal capabilities, competency & culture. Build a cohesive approach to tackle climate strategy. Align understanding of climate-related risks and opportunities across the Group. 	Our Leadership Sustainabilit at PROLINTAS
Ŵ	STRATEGY Disclose the actual and potential impacts of climate-related risks on the the Group's operations, strategy and financial planning where such information is material.	 Continuous capacity building for TCFD adoption. Prioritising GHG Emissions & Climate Action as a material matter. 	 Develop Climate Strategy Enhance Scope 1, 2 and 3 carbon emissions profiles and dashboards. Strengthen the Carbon Reduction Strategy. Establish short, medium and long-term climate targets. Assess physical and transition risks and opportunities using scenario analysis over the short, medium and long term. 	Materiality Matters Accelerating Advancement Elevating Lives
(RISK MANAGEMENT Disclose how the organisation identifies, assesses and manages climate-related risks.	 Climate risks are managed under the Group's Enterprise Risk Management 	 Conduct physical risk assessment covering our significant asset locations. Conduct transition risk assessment based on policy, technology, market and reputation risk drivers. 	Converging Communities
A	METRICS AND TARGETS Disclose the metrics and targets used to assess and manage relevant climate-related risks where such information is material.	Disclosed carbon reduction efforts undertaken by PROLINTAS.	 Set short, medium and long-term carbon reduction targets. 	Assurance

forefront of sustainability and responsible corporate stewardship.



OUR CASE STUDY

n the contemporary push towards sustainability, the strategic shift from traditional energy sources to renewable alternatives marks a pivotal development in climate action. This transition underscores a profound commitment to environmental stewardship and operational efficiency and sets new standards for industry practices.

Adopting solar energy solutions to revolutionise how energy is sourced and utilised within critical infrastructures such as highways is at the forefront of this movement.

The initiative to harness the power of the sun reflects a broader ambition to minimise our carbon footprint and ensure a stable, dependable energy supply. It embodies the growing dedication to sustainable development and addresses the escalating demand for green energy alternatives.

Energy consumption represents a significant portion of the operational expenses of maintaining our highways.

> Innovation Meets Sustainability: 238 kWp Solar PV System commissioned at the Elmina Toll Plaza, GCE.

CHALLENGES

GRID RELIANCE

Our toll plazas rely heavily on grid energy. This long-standing dependence on conventional energy sources has been a critical aspect of infrastructure management, ensuring the continuous functioning of these essential services.

OPERATIONAL COSTS AND ENERGY CONSUMPTION

Energy consumption represents a significant portion of the operational expenses of maintaining our highways.

ENVIRONMENTAL CONSIDERATIONS

The reliance on grid energy, predominantly generated from coal and gas, poses a challenge to achieving environmental sustainability objectives. This method of energy sourcing contributes to an increased carbon footprint, diverging from the global movement towards reducing environmental impact and promoting sustainable practices.

PROLINTAS realised the need for change and began exploring ways to harness the potential of renewable energy.

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Powering-Up with Solar Energy: 259 kWp Solar PV System commissioned at the Alam Impian Toll Plaza, LKSA.



SOLUTION

SUSTAINABLE TRANSITION TO RENEWABLE ENERGY SOURCE

PROLINTAS has ventured towards sustainable energy by adopting an innovative solar rooftop project for its brownfield highways at the Alam Impian Toll Plaza at LKSA and the Elmina Toll Plaza at GCE.

The initiative is a strategic shift from conventional energy sources to renewable alternatives, thus emphasising our commitment to operational efficiency and environmental stewardship.

LOCATION		CAPACITY (kWp)
GCE	Elmina Toll Plaza	238
ILKSA	Alam Impian Toll Plaza	259

BENEFITS

ECONOMIC

The shift towards renewable energy sources has decreased our dependence on grid electricity, leading to reductions in energy costs. To date, our solar rooftop initiative has culminated in a total savings of **RM173,687.**

SITES		FY2023 TNB ELECTRICITY BILLS CONSUMPTION (RM)	SOLAR GENERATION SAVINGS (RM)	
GCE	Elmina Toll Plaza	244,228	85,627	
IKSA	Alam Impian Toll Plaza	339,322	88,060	

• The rooftop solar PV systems began operations in June 2023.

• Solar generation savings in RM is calculated from: Total Energy Generated (kWh) x RM0.55





Overview

ENVIRONMENTAL

The adoption of solar energy has lowered our carbon footprint, aligning with global efforts to combat climate change. Through this initiative, we have avoided a total of **233 tonnes** CO_2e in carbon emissions.

SITES		FY2023 TNB ELECTRICITY BILLS CONSUMPTION (kWh)	SOLAR GENERATION (kWh)	EMISSIONS AVOIDANCE (tCO ₂ e)
GCE	Elmina Toll Plaza	319,344	155,687	121
ALKSA	Alam Impian Toll Plaza	637,004	144,380	112

• The rooftop solar PV systems began operations in June 2023.

• Conversion of electricity to tCO₂e (Malaysia): kWh x 0.78 kg

GOING FORWARD

e are committed to further advancing our GHG reduction initiatives and enhancing our climate action efforts. Building on the success of our current projects, we aim to explore and implement innovative solutions that will drive our emissions even lower and foster a more sustainable future.

We will continue to align our strategies with global climate goals through proactive engagement and continuous improvement in our environmental performance. About PROLINTAS

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ELEVATING LIVES SUSTAINABLE MATERIALS

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HIGH IMPORTANCE MEDIUM IMPORTANCE LOW IMPORTANCE

SIGNIFICANCE

perating six urban highways with a cumulative length of almost 260 km, our highways represent not just a vital urban transport artery but also a commitment to the highest standards of maintenance, safety, and user comfort.

Recognising our responsibility, we ensure that every stretch of the road is meticulously maintained to safeguard the safety and comfort of all road users. Our focus extends to using Sustainable Materials for road maintenance, pavement rehabilitation, and pothole repairs, as well as in our offices and buildings, to minimise our ecological footprint.

While we intensify our efforts to identify and utilise feasible sustainable materials, we are also mindful of the cost implications, as typically, ecofriendly options come at a premium compared to conventional materials. However, we are dedicated to finding a balance, recognising that the higher upfront cost of sustainable materials can be offset by their long-term benefits, such as greater durability and reduced environmental impact.

Our commitment to sourcing sustainably is a strategic choice that extends beyond fulfilling our responsibility. It is about future-proofing our business in an increasingly eco-conscious world and maintaining relevance in a competitive industry. OUR APPROACH SUSTAINABLE MATERIALS

01

02

ECO-EFFICIENT INFRASTRUCTURE AND MAINTENANCE SOLUTIONS

> SUSTAINABLE WORKPLACE AND BUILDING MANAGEMENT

Advancing our commitment to environmental responsibility through a dual-pronged approach:

O1: In the realm of our highway infrastructure, we are progressively incorporating a higher proportion of sustainable materials. This encompasses the initial construction and ongoing maintenance, ensuring that our roadways are durable and efficient.

02: Our dedication to sustainability extends beyond the highways themselves. We are integrating ecofriendly practices by selecting sustainable materials for the construction and ongoing maintenance of our ancillary buildings, including offices and support structures. Efforts are also being made to increase awareness and the usage of sustainable daily consumables at our workplace.

Implementation of GlasGrid[®].



SUSTAINABLE MATERIALS

ECO-EFFICIENT INFRASTRUCTURE AND MAINTENANCE SOLUTIONS

01

n our ongoing efforts to enhance the safety and durability of our highways and reduce environmental impact, we have introduced numerous innovative solutions. This reinforces our commitment to expanding the use of sustainable materials in our infrastructure projects.

In 2020, we began consistently employing carpet patches for potholes repairs across four highways. We have since continued this practice to ensure long-lasting solutions. In 2021, we started using GlasGrid [®] for pavement reinforcement, contributing to the structural integrity of the highways. This was applied to the GCE highway, and we continued to use this approach in 2022 on the SILK highway.

Additionally, in 2022, we integrated premix additives from recycled waste such as plastic, rubber tires, palm oil fibres, and synthetic fibres into the asphalt for road pavement on the GCE and SILK highways. This not only reduced the environmental footprint but also promoted resource efficiency. In 2023, we successfully deployed Alle-Grip as a durable and sustainable alternative for pavement resurfacing at AKLEH. This showcased our commitment to adopting innovative solutions and ensuring the continuous enhancement of highway performance.

Our commitment to circular economy principles and continuous enhancement in performance guides our choices of materials and practices. These practices reflect our dedication to sustainable and resilient infrastructure, which harmonises with the principles of the circular economy. We will continue to prioritise sustainable materials, innovative solutions, and best practices to ensure the comfort and convenience of road users while enhancing the safety, durability, and positive environmental impact along our highways.

KEY HIGHLIGHT

Overall Area Paved with Sustainable Materials (FY2020-FY2023):

65,363 m²

FY2023:

31,480 m² Area Paved with Sustainable

Materials



Delamination Spot along Lane 2 (Touch 'n Go) at AKLEH's toll booth.

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By utilising the Super Fiber Mix (SFM), not only are we able to contribute to a positive impact on the environment, but we are also able to reduce our costs by up to 40%.



ELEVATING LIVES SUSTAINABLE MATERIALS

pavement.

PRODUCTS



ground below. This characteristic distinguishes it from traditional asphalt pavement,

A pavement reinforcement system used to enhance the longevity and durability of

a robust fibre GlasGrid[®] that strengthens the asphalt layer, prolonging the life of the

road surfaces. Typically integrated between layers of asphalt, these pavements feature

which is designed to be impervious and directs water to drainage systems.

WHAT A type of pavement with high porosity that allows rainwater to pass through into the WHY WHEN & WHERE To Reduce 2020 - GCE

Accident Risk

To Reinforce

Pavement

Structure

2021 - SILK

2022 - GCE

Porous Asphalt



GlasGrid[®]



Microsurfacing



MacRebur - MR6



This innovative approach yields a more resilient surface, mitigating the necessity for frequent repairs and maintenance. The GlasGrid [®] bonds to the surface of the road using an asphalt adhesive, contributing to a stronger, longer-lasting infrastructure.		
Microsurfacing, a road maintenance technique, optimises skid resistance by enhancing the frictional characteristics of the road. This method entails applying a thin, tough layer of asphalt emulsion combined with finely crushed stone. The microsurfacing material is then spread across the road surface and compacted, resulting in a smooth finish and durable surface. This meticulous process creates a sturdy road surface and seals small cracks and imperfections, improving skid resistance and mitigating the risks of road accidents.	To Reduce Accident Risk	2021 - AKLEH 2022 - GCE
MacRebur MR6, a waste plastic additive, enhances pavement performance when incorporated into Hot Mix Asphalt (HMA). Comprised entirely of recycled plastic waste, MacRebur MR6 holds the prestigious My HIJAU accreditation, affirming its eco-friendly attributes.	To Support Circularity	2022 - GCE 2023 - SILK



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TOTAL AREA (M²)	TOTAL LENGTH (KM)	WORKABILITY & BENEFITS		Our Business
2,300 m ²	0.2 km	 Helps mitigate aquaplaning by draining water through a permeable surface. Effective water management on roads. By allowing water to seep through the pavement and into the soil, porous asphalt reduces the amount of runoff that occurs during rainstorms. 	 Reduces flood risks. Improves road safety in accident-prone areas during heavy rain. 	Approach Guiding Voices Our Leadership
2021 SILK - 12,743 m ² 2022 GCE - 7,600 m ²	2021 SILK - 3.49 km 2022 GCE - 2.08 km	 Reduces milling thickness. Reduces asphalt usage. Reduces milling waste. Reduces working period. 		Sustainability at PROLINTAS Our Materiality Matters Accelerating
2021 AKLEH - 7,200 m ² 2022 GCE - 3,600 m ²	2021 AKLEH - 0.6 km 2022 GCE - 0.15 km	 Enhances road safety. Improves road surface friction. Significantly improves skid resistance, crucial for preventing skidding especially on wet road surfaces. 	 Reduces accident risks. Effective in adverse weather conditions. Improves safety in emergency braking scenarios. 	Advancement Elevating Lives Converging Communities
2022 GCE - 680 m ² 2023	2022 GCE - 0.2 km 2023	 Reduces plastic waste in landfills. Creates durable and sustainable road surfaces. Reduces maintenance costs. Enhances asphalt binding properties. 	 Extends pavement lifespan. Provides smoother and safer driving experiences. 	Data & Assurance

SILK - 800 m²

SILK - 0.2 km



ELEVATING LIVES SUSTAINABLE MATERIALS

Place.

PRODUCTS





2023 - AKLEH

... . .



Geveko PlastiRoute[™] High Skid Resistance Rollgrip



Crumb-Rubber Modified Asphalt



NOVACEL[®] Pure Palm Oil Fibre incorporated in Asphalt



Alle-Grip is a multi-functional pavement surface treatment with excellent adhesion on asphaltic and concrete roads. It comprises green, low Volatile Organic Compounds (VOC) reactive resin, which undergoes the process of HYDROSYNTHESIS[™] to form a robust yet elastic bond between special aggregates and the road. The treatment incorporates high abrasion-resistant and refractive aggregates, resulting in enhanced skid resistance, improved visibility and a maintenance-free system.

The thixotropic material, maintaining a non-levelling and non-flowing nature after rolling, yields a textured surface with superior traction for vehicles, especially in wet or slippery conditions. Ideal for preferential lanes and cycle lanes in heavy traffic zones, this permanent, easily applied, anti-slip coating reduces braking distance on both asphalt and concrete surfaces using a primer. Its high durability and quality ensure sustained performance and colour retention, minimising the necessity for frequent reapplications.

This product is manufactured from recycled rubber tire waste, offering road surfaces

demands of increased traffic and loading pressures. It adheres to strict guidelines set by DOSH in producing Crumb-Rubber Modified Asphalt, ensuring better-performing roads that are also environmentally friendly by appropriately Putting Waste In the Right

that are not only safer and quieter, but also more durable to meet the growing

To Improve Skid

Resistance

To Reduce

Accident Risks

2023 - DASH

To Support 2023 - GCE Circularity

Palm Oil Fibre is incorporated into Fibre Mastic Asphalt (FMA), which constitutes a gapgraded mixture featuring a significant proportion of coarse aggregate and standard bitumen (60/70), along with the addition of cellulose fibre additives. This innovative approach was conceived to address severe pavement cracking and rutting caused by extensive damage from heavy axle loads. To Support Circularity 2023 - SILK



Overview



• Focuses on creating durable and sustainable roads, particularly in high-traffic areas.



ELEVATING LIVES SUSTAINABLE MATERIALS

WHAT

FORTA-FI® Fibre (Super Fibre Mix)



Carpet Patch



Super Fibre Mix (SFM) contains FORTA-FI®, a high tensile strength synthetic fibre blend formulated to reinforce asphalt mixes in new construction and rehabilitation projects. The combination of aramid and polyolefin fibres is designed to enhance the current mix design. Aramid fibres will not melt in the asphalt mix and are known for their strength and durability in high and low temperatures.

The traditional methods of patching potholes, such as hot mix/cold mix patching

One of the main issues with these methods is the inability to prevent water from seeping into the treated area, which can further weaken the supporting soil and lead to the formation of new potholes. The carpet patch could prevent water seepage and

prolong the lifespan of the road surface.

methods, have limitations in effectively resolving the pothole problem in Malaysia.

WHY WHEN & WHERE

To Reinforce	2023 - SILK
Pavement	
Structure	2023 - GCE

For Pothole Patching

2023 - All Highways

PROLINTAS utilises Industrial Building System (IBS) components like precast crossheads, beams and parapet walls in the concrete structural elements of bridges.

paves the way for a resilient future. **PROLINTAS** embraces eco-friendly practices by using sustainable materials, contributing to a greener, more responsible infrastructure.





Overview

			PROLINTAS
TOTAL AREA (M²)	TOTAL LENGTH (KM)	WORKABILITY & BENEFITS	
SILK - 8,800 m ²	6.46 km	 Saves up to 40% cost compared to deep treatment. Reduces working period. 	Our Business Approach
GCE - 14,800 m ²		Minimises traffic disruptions by eliminating the need for road closures during repair works.	Guiding Voices

Various	Various	Immediate installation capability reduces downtime and inconvenience for road users.	Leadership
Locations	Locations	• Sustainability is evident through using less raw materials, minimal heating and is an environmentally friendly approach.	
		Successfully tested over the past three years on both low and high-speed roads in Malaysia.	Sustainability
		Demonstrates reliability and effectiveness in real-world conditions.	at PROLINTAS



Installation of Geveko PlastiRoute[™] High Skid Resistance Rollgrip at DASH to improve road safety measures.



TAPAK KAJIAN PENGGUNAAN BAHAN LESTARI

CRMA

GUTHRIE CORRIDOR EXPRESSWAY

KM 3.1 - KM 2.9 (SOUTHBOUND)

ELEVATING LIVES SUSTAINABLE MATERIALS

OUR PERFORMANCE

e track and assess the performance of our Sustainable Materials initiatives using metrics such as the proportion of sustainable materials utilised in our highway infrastructure and office consumables. As of the end of 2023, we successfully paved 13.9 km of our highways using sustainable materials, comprising 5.3% of the total highway effective length. This achievement corresponds to a substantial area coverage of 65,363 m². While still in the exploratory stage, our commitment to incorporating sustainable materials in highway pavement works reflects our dedication to environmentally conscious practices and sustainable development. This progress contributes to the longevity and resilience of our roadways and underscores our ongoing efforts to build a more sustainable and environmentally friendly transportation network.

COMMITMENT TO PROGRESS

This commitment is contingent upon factors such as the availability of technology, associated costs and the required maintenance period. As we navigate these new possibilities, our determination to contribute more to the environment remains steadfast. Each test and trial we undertake marks a step forward in our mission to develop roads that connect communities safely, and actively contribute to protecting our planet.

By monitoring every test and trial as a step forward in the mission, we are embracing an innovative and adaptive approach. This determination will likely contribute not only to the development of safer and more sustainable roads but also to the broader conversation around sustainable infrastructure practices. As technology and knowledge continue to advance, our efforts can serve as a model for others in the construction and infrastructure sectors.

GCE Highway : Crumb Rubber-Modified Asphalt offers a sustainable and performanceenhancing solution for road construction, utilising recycled rubber to create more durable and environmentally friendly pavements.

SUSTAINABLE MATERIALS



Successfully paved **13.9 km** with **Sustainable Materials** compromising approximately **5.3%** of the total effective length of highways. SUSTAINABLE WORKPLACE AND BUILDING MANAGEMENT

02

ur use of sustainable materials is extended to our office and service buildings, where the intent is to create sustainable work environments that enhance the wellbeing of our employees and support productivity. About PROLINTAS

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ELEVATING LIVES SUSTAINABLE MATERIALS

PARTNERSHIPS AND COLLABORATIONS

n a commitment to drive sustainable change, the Group actively engages in collaborative efforts with diverse companies and research institutions to explore and develop innovative eco-friendly materials. This collaborative spirit extends beyond our organisation, fostering partnerships that contribute to the enhancement and maintenance of our extensive highway network.

One notable collaboration was established with Alle Chemie Sdn Bhd between April and June 2023. This partnership aimed to implement pavement enhancement works covering 3,000 m² at AKLEH's Dato' Keramat toll plaza.



AFTER PAVEMENT SURFACE TREATMENT

LABORATORY TESTED

BEFORE PAVEMENT SURFACE TREATMENT

\checkmark

Skid resistance value improvements surpassing standard benchmarks.

SUSTAINABLE MATERIALS

ECONOMIC

- Adopting advanced German technology at local supplier pricing to elevate infrastructure quality.
- Enhancing the durability and performance of pavement repairs with high-performance solutions.

ENVIRONMENTAL

- Our circular waste management approach, which repurposes milling waste, conserves raw materials and minimises our carbon footprint, demonstrates environmental stewardship.
- Fostering a sustainable supply chain by minimising raw material usage and reducing landfill waste.

SOCIAL

Enhancements in skid resistance and durability from these highperformance solutions lead to safer, more dependable roads, fulfilling our social responsibility to our road users and the surrounding community.



- practices.
- Cultivating a unified commitment to environmental sustainability, resulting in reduced reliance on nonrenewable resources and reductions in landfill waste.
- Strengthening the supply chain, prioritising sustainable growth, innovation and ensuring community safety, thereby setting new standards in the development and maintainance of large-scale infrastructure.

Alle Chemie is poised to broaden its presence in the industry while contributing to the development of sustainable supply chains.

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ELEVATING LIVES SUSTAINABLE MATERIALS

OUR CASE STUDY

he shift to sustainable materials in road pavement rehabilitation is driven by the need to reduce environmental impact, combat resource depletion, mitigate climate change, enhance durability, achieve cost-efficiency and meet regulatory and public expectations. This transition from conventional asphalt is essential for a sustainable and resilient infrastructure.

CHALLENGES

RESILIENCE AND DURABILITY: Conventional asphalt is prone to wear and damage, requiring frequent maintenance and rehabilitation. Sustainable materials aim to provide more durable, longer-lasting solutions to reduce the frequency and cost of repairs.

ECONOMIC EFFICIENCY: Over time, sustainable materials can lead to cost savings by reducing maintenance expenses and extending the life of road pavements. This, in turn, offers an attractive benefit-cost ratio for infrastructure investments.

ENVIRONMENTAL IMPACT: Asphalt relies on non-renewable resources This dependency is unsustainable in the long term as these resources become limited and more expensive.



fibre blend formulated to reinforce asphalt mixes in pavement rehabilitation projects.

SUSTAINABLE MATERIALS

HAS NO.

60

Overview

GOING FORWARD

Committed to pioneering sustainable development, our forward-looking strategy involves exploring the integration of eco-friendly materials in the construction and maintenance of our elevated highways. Reflecting our deep commitment to EESG principles, this initiative aims to enhance the quality and longevity of road infrastructure for the benefit of users and reduce the environmental impact of construction processes.

By focusing on sustainable materials, we aim to decrease the carbon footprint associated with road construction and maintenance, thereby contributing to continuously tackling climate change-related issues. This approach aligns with global sustainability goals and demonstrates our responsibility towards environmental stewardship.

Socially, our efforts are to improve the overall user experience by providing safer, more durable and comfortable road surfaces. This initiative underscores our commitment to community wellbeing and safety, enhancing the quality of life for all road users.

From a financial perspective, integrating sustainable materials into constructing and maintaining our elevated highways supports our environmental and social goals and promotes long-term cost-effectiveness. By extending the lifespan of our roads and reducing the need for frequent repairs, we anticipate considerable savings in maintenance costs. This long-term cost-effectiveness further reinforces the value of our sustainable approach, ensuring that our investments today yield benefits for generations to come.

Governance-wise, our move towards sustainable construction practices reflects our dedication to transparency, innovation and accountability. We are setting new standards in the infrastructure domain, ensuring that our projects are benchmarks of engineering excellence and sustainability.

Integrating sustainable materials into the asphalt mix is a holistic approach that benefits root users, the planet and the economy. It is a testament to our dedication to leading the way in sustainable infrastructure development, with a keen eye on environmental conservation, social responsibility, financial sustainability and exemplary governance. About PROLINTAS

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WATER MANAGEMENT

HIGH IMPORTANCE MEDIUM IMPORTANCE

SIGNIFICANCE

ROLINTAS acknowledges Malaysia's abundant rainfall as a valuable resource while also understanding the limitations of treated water, particularly in light of climate change challenges. We prioritise responsible and conservative water usage in highway operations, reflecting our commitment to environmental stewardship and sustainable practices. Although Water Management may not be a high importance in our materiality matrix, our dedication to efficient water use underscores our broader environmental responsibility objectives. This approach remains aligned with our ongoing efforts to adapt to the evolving needs and conditions shaped by climate change.

OUR APPROACH WATER MANAGEMENT

O1 ADVANCING SUSTAINABLE WATER USE AND CONSERVATION

> PRESERVING WATER QUALITY

REPLENISHING GROUNDWATER AND PREVENTING FLOODS As part of our commitment to the conservation of natural resources, we practice sustainable water management to ensure our operations contribute positively to the communities we serve and the environment.

Our approach flows through three focused areas:

01: We are taking steps to conserve water by reducing usage in operations and harvesting rainwater, contributing to the sustainable use of this resource.

02: Our commitment extends to maintaining high water quality standards, ensuring that our operational activities do not adversely affect the surrounding aquatic ecosystems.

03: We focus on innovative strategies that replenish groundwater sources and aid in effective flood prevention, thus safeguarding both the environment and local communities.

02

03

WATER MANAGEMENT

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• o ensure the efficient use of water and optimal daily consumption, we have installed rainwater **ADVANCING SUSTAINABLE** 01 harvesting systems on five highways: GCE, LKSA, Kajang SILK, SUKE and WATER USE AND **CONSERVATION DASH.** Through the collection and storage of rainwater, we decrease our reliance on commercial sources of treated piped water for activities like highway cleaning and landscaping. This reduces our consumption and lessens our dependence on external water supplies. **RAINWATER HARVESTING SYSTEM** WHY USE BENEFIT **WHAT** Inter-connected rooftop Rainwater collected serves Rainwater harvesting supplements Access to alternative water as non-potable water the supply of treated water and with storage tanks as sources to reduce reliance supply for cleaning and the catchment to collect contributes to water security in the on treated water. and store rainwater. landscaping purposes. event of temporary water cuts or in areas with limited water resources. A total of 2,097,335 litres of rainwater was used for cleaning and

landscaping operations at **DASH**.



ELEVATING LIVES WATER MANAGEMENT

OUR PERFORMANCE

n 2023, PROLINTAS charted a 17% increase in absolute water consumption compared to 2022. Nevertheless, we saw an 11% decrease in intensity recorded per million traffic volume for the same year.

TOTAL WATER USE (m ³)			
2023	96,412		
2022	81,898		
2021	72,739		
2020	72,740		

TOTAL RAINWATER HARVESTING CAPACITY (m³) 2023 235 2022 226

2021 0

2020 0

WATER USAGE INTENSITY (m³/Mil Traffic)





*In 2023, rainwater harvesting capacity was enhanced through additional facilities at the SUKE Ampang and Teratai toll plazas.

elevating lives ک WATER MANAGEMENT

02 PRESERVING WATER QUALITY	n line with our commitment quality, the Group is steadfa wastewater is treated to me levels before discharge from o	towards water - st in ensuring that 2 et permissible 2 our operation sites. 2	COMPLIANCE WITH EFFLUENT DISCHARGE (Standard B) 023 100% 022 100% 021 100%	Overview About PROLINTA Our Busin/ Approach
	TREATMENT OF WAS			and advertise of the
WHY	WHERE			Guiding Voices
Wastewater treatment preserves the quality of water discharged into the natural environment.	<section-header></section-header>	Managed by PROLIN KAJANG CIK STP Bukit Kajang STP Sg Balak STP Sg Long STP Sg Ramal STP Sg Ramal STP Alam Impian (ay-by)	NTAS: 9 • Acce • STP Elmina • STP Jelutong • STP Lagong • STP RSA (South) • STP RSA (North) • STP Alam Damai • STP Teratai • STP Ampang	Our Leadership at PROLINTA Our Materiality Matters Accelerati Advancer
HOW At our sewage treatment plants (STPs), wastewater is treated to meet environmental safety standards before being discharged into waterways.	Monthly sampling of treated effluent to ensure compliance o Resu with permissible levels. DOE • Routine maintenance of STPs according to ISO 9001 and ISO 14001.	Its submitted to for transparency. • Desludging activities to mitigate environmental impa	Each STP operation is supervised by a competent person: Certified Environmental Professional Sewage Treatment Plant Operation (CePSTPO).	Elevating Lives Convergin Communit Data & Assurance

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ELEVATING LIVES

03

REPLENISHING GROUNDWATER AND PREVENTING FLOODS

ur efforts in water management include the development of retention and detention ponds that can replenish groundwater levels while also minimising the risk of local flash floods.



OUR CASE STUDY

CROSSING OF PIPE CULVERT AND ON-SITE DETENTION FOR FOURTH LANE WIDENING OF KAJANG SILK HIGHWAY

Sungai Ramal Interchange to Uniten Interchange, Kajang SILK Highway

--- CHALLENGES

- Previously, the valley within Kajang SILK's right of way acted as a natural detention pond, collecting heavy water discharge from nearby developments.
- Recent construction developments have reduced the valley's capacity, leading to water overflow onto the mainline during heavy rains.
- The critical area spans from km 25.0 to km 26.4 on the Kajang SILK Highway, with frequent flash floods observed, especially at km 25.7 towards Kajang.

SOLUTIONS

To mitigate water overflow during heavy rains, we have implemented two key measures:

1. Constructed an on-site detention pond with a capacity of 518 m3, approximately 20% the size of an Olympic swimming pool, to manage excess water.

2. A pipe culvert with a discharge rate of 2.44 m3 per second, equivalent to channelling 2,440 litres of water every second, has been installed, a substantial flow rate to reduce flood risk. For illustration, this is comparable to 2,440 mineral water bottles, one litre each, flowing every second.

Monitoring flooding on highways involves inspecting and maintaining drainage systems and infrastructure, as well as using sensors and cameras to detect water levels and blockages. This ensures timely interventions to minimise flood risks and maintain safe travel conditions for motorists.

> Mitigation measures to deter flood incidents at Kajang SILK were undertaken as part of the Fourth Lane Widening project.

WATER MANAGEMENT

BENEFITS

-ECONOMIC-

Efficiently minimising highway floods improves traffic flow and connectivity, significantly reducing delays and economic costs for businesses and commuters. This results in more effective transportation, boosting productivity and contributing to the economic stability of the area.

-ENVIRONMENTAL-

By implementing flood mitigation measures, we can significantly decrease water pollution from runoff, safeguarding nearby ecosystems. Additionally, it aids in preserving the highway's structural integrity, minimising the frequency of repairs needed. This approach not only protects the environment but also ensures long-term infrastructural resilience.

-SOCIAL-

Effective flood mitigation not only enhances public safety by reducing the likelihood of accidents during heavy rainfall but also ensures uninterrupted access to vital services. This approach significantly contributes to improved living standards and bolsters the community's resilience, fostering a safer and more secure environment for all.

-GOVERNANCE

Adopting flood mitigation strategies on urban highways showcases proactive governance and a solid commitment to public safety and efficient resource utilisation. Such measures build public confidence in governing authorities and promote active community engagement in urban planning and sustainability efforts, fostering a collaborative approach to urban development and environmental stewardship.



GOING FORWARD

We remain committed to proactive water management as a highway operator. Our focus will be on implementing sustainable solutions to manage water resources effectively, mitigate potential risks of water overflow, and minimise environmental impact. By prioritising responsible water usage and investing in resilience measures, we strive to uphold our commitment to environmental stewardship and contribute to a more sustainable future for all stakeholders.

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P ELEVATING LIVES WASTE MANAGEMENT

HIGH IMPORTANCE MEDIUM IMPORTANCE LOW IMPORTANCE

SIGNIFICANCE

anaging waste efficiently is a key concern as a highway operator, especially given the substantial amount of waste produced in various segments of our operations. This encompasses everything from construction and maintenance debris and litter from road users to waste in our rest & service areas.

Recognising this challenge, we are deeply committed to managing waste effectively and responsibly, which is integral to our operational strategy. While Waste Management is categorised as a low-importance issue in our materiality matrix, our dedication to handling it environmentally underscores our broader responsibility towards ecological conservation and sustainable practices.

OUR APPROACH WASTE MANAGEMENT

SYSTEMATIC AND EFFECTIVE WASTE SEGREGATION

ADVANCING WASTE CIRCULARITY AND LANDFILL REDUCTION

At PROLINTAS, our waste management strategy has a dual focus: optimising efficiency and enhancing environmental sustainability.

This comprehensive approach begins with two primary elements: **O1:** Prioritising the meticulous sorting of various waste types at the source to ensure responsible management and disposal.

02: Emphasising increased recycling and repurposing to conserve resources and uphold the principles of a circular economy.

01

02

ELEVATING LIVES

OUR PERFORMANCE

e monitor the effectiveness of our Waste Management initiatives by tracking key performance indicators, including the volume of municipal waste and scheduled waste generated on our highways and within our business operations.

Additionally, we measure the amount of waste recycled and repurposed for practical use along our highways and within our broader business activities.

a delater				Appendix spect
WASTE GENERATED, DIVERTED AND DISPOSED (mt)				
Type of Waste	2020	2021	2022	2023
Non-Hazardous Waste	363	414	447	457
Scheduled waste	1	0	3	2
Total Generated	365	414	450	459
Recycled waste	36	37	60	37
% of total waste	10%	9%	13%	9%
Disposed waste	328	377	389	421
% of total waste	89%	91%	86%	91%







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Breakdown of type of waste in FY2023:

1. Disposed Waste - Mixed Waste (Highway & Office Operations) - 275 tonnes, Branches - 146 tonnes, Scheduled Waste 2 tonnes.

2. Recycled Waste - Food Waste 1.8 tonnes, Paper - 3.6 tonnes, Aluminium - 0.02 tonnes, Plastic - 0.429 tonnes, Scrap Metal - 32 tonnes.

diverted from

disposal.



01

ELEVATING LIVES

SYSTEMATIC AND EFFECTIVE WASTE SEGREGATION

rom the outset, we systematically segregate our waste materials at the source into municipal and scheduled waste. This approach optimises our waste-handling processes, minimises the risk of contamination through the safe disposal of hazardous substances, and facilitates practical recycling efforts.

2. MILLING WASTE

SOURCE & DESCRIPTION OF WASTE Activity: Pavement Rehabilitation

- Debris from pavement rehabilitation activities such as resurfacing, patching and repairing.
- such as resultacing, patch

PROCESSES:

- Waste collection by appointed contractor.
- Waste disposal at landfill.

1. GENERAL WASTE



SOURCE & DESCRIPTION OF WASTE: Activity: Daily Highway Operations

- Waste generated by operations staff at the administration building.
- Trash on highways discarded by road users.

PROCESSES:

- Provision of 3R bins at Office Buildings, RSAs & Lay-Bys.
- Routine waste collection by licensed contractors.
 Waste disposal at landfill or recycled.

3. BIOMASS WASTE

SOURCE & DESCRIPTION OF WASTE:

Activity: Pruning

• Biomass from trimming trees and shruberry along highways to ensure road safety and visibility of traffic signs and signals.

Activity: Trimming Trees and Grass Cutting

Trimming trees, mowing grass and shrubbery along highways

PROCESSES:

- Waste collection by appointed contractor.
- Waste disposal at landfill.

4. SCRAP METAL

SOURCE & DESCRIPTION OF WASTE: Activity: Highway Maintenance

Obsolete or damaged materials and components such as old road sections, worn-out road signs, damaged guard rails and barriers.

(佛)

PROCESSES:

RATE 3

 Waste collection at each operation site by licensed contractors for recycling.

6. FOOD WASTE

5. SCHEDULED WASTE

SOURCE & DESCRIPTION OF WASTE:

Activity: Road Accidents and Highway Maintenance

- Debris from accidents such as spilled fuel and other hazardous chemicals requiring specialised handling and disposal.
- SW 102, SW 103, SW 109, SW 110, SW 408 and SW 409.

PROCESSES:

• Waste is handled, transported, and disposed of safely by a licensed contractor equipped to handle hazardous materials.

SOURCE & DESCRIPTION OF WASTE:

 Organic waste such as leftover food discarded by RSA patrons.

PROCESSES:

• Installation of food waste composter at RSA.

ی م م

 Conversion of food waste to fertiliser to be used in landscaping along our highways.

> PROJEK LINTASAN KOTA HOLDINGS SDN BHD (PROLINTAS) SUSTAINABILITY REPORT 2023

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02

ADVANCING WASTE CIRCULARITY AND LANDFILL REDUCTION y intensifying our recycling efforts, PROLINTAS is steadily advancing towards a circular economy wherein waste materials are repurposed and reused instead of indiscriminately disposed of in landfills. These endeavours contribute to the conservation of finite natural resources and mitigate the impact of our operational activities, ultimately reducing our environmental footprint.



INITIATIVE 1 PROVISION OF FABRIC RECYCLING BIN





SCRAP METAL COLLECTION AND RECYCLING

Unused steel or metal structures from highway maintenance or the detritus from accidents are collected for recycling including guard rails, variable message sign (VMS) panels, air conditioning units, fire extinguishers and lantern lights.

All six highways.

କ୍ୱିମ

Weight of scrap metal collected (kg)	Total collected (RM)		
2023 : 32,622 2022 : 57,094 2021 : 37,156 2020 : 36,705	2023 : 66,768 2022 : 101,685 2021 : 56,865 2020 : 2,460		



INITIATIVE 3 FOOD WASTE COMPOSTER

Food composting helps to reduce the amount of organic waste generated by RSA tenants and road users, thereby reducing the waste for disposal at landfills. The food waste composter converts this waste into nutrient-rich compost, which are then used as fertiliser for landscaping.

Both bounds of RSA Elmina, GCE.

Weight of food waste composted (kg)

e Fertiliser produced (kg)

2023:	1,080	2023:	216
2022 :	630	2022 :	126
2021 :	700	2021 :	140

*Note: Every 100 kg of food waste yields approximately 20% (20 kg) of fertiliser.





All six highways and headquarters.

Paper (kg)	Tin (kg)
2023 : 3,600	2023 : 20
2022 : 2,428	2022 : 13
2021 : 86	2021 : 0
Plastics (kg)	Total collected (kg)
2023 : 429	2023 : 4,049
2022 : 495	2022 : 2,936
2021 : 0	2021 : 86

areas within the proximity of our highways between December 2023 and March 2024.

Total collected (kg)

2023: 273 Shoes Collected

- with a local NGO.
- \bigcirc 1. Kampung Sg Balak, Kajang. 2. PPR Sri Jelatek.

Total collected (kg)

2023 : 12 of used cooking oil upcycled to soaps.

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GOING FORWARD

ROLINTAS will remain dedicated to advancing our waste management practices. We will focus on sustainability, innovation, and collaboration to minimise waste, increase recycling, and promote a circular economy. We aim to continuously improve processes, reduce environmental impact, and positively impact the communities we serve.

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BIODIVERSITY

HIGH IMPORTANCE MEDIUM IMPORTANCE

SIGNIFICANCE

ROLINTAS, embodying environmental stewardship, goes beyond operational duties to actively support Biodiversity. Our focus extends beyond immediate tasks to embrace a broader vision of environmental stewardship, preserving and enriching biodiversity within and around our project areas.

Our approach surpasses mere compliance, leading to ecological conservation. By integrating sustainable practices from planning to execution, we ensure our impact on the natural world is beneficial. PROLINTAS becomes not just a highway operator but a proactive contributor to planetary ecosystems.

Viewing biodiversity as integral to ecological balance, we prioritise innovative environmental practices for the long-term health of our planet.

Preserving biodiversity along our highways is crucial as it enhances ecosystem resilience, promotes pollination for adjacent agricultural lands and provides habitats for wildlife. These factors contribute to overall environmental sustainability and mitigating the impacts of habitat fragmentation

caused by road infrastructure.

OUR APPROACH BIODIVERSITY

FOSTERING ECOSYSTEMS ALONG OUR HIGHWAY NETWORK

02 NURTURING THE ENVIRONMENT BEYOND OUR OPERATIONAL BOUNDARIES Our biodiversity initiatives consist of two distinct approaches. The first focuses on supporting ecosystems along our highways, while the second nurtures green environments beyond our immediate operational boundaries. **01:** Revolving around the concept of **'Symbiotic Highways'**, we embody a profound synergy between urban development and the preservation of natural ecosystems.

02: By recognising the

interconnectedness of ecosystems, we strive to be pioneers in responsible infrastructure development, setting a standard for the industry and leaving a positive impact on the planet we all call home.

01



FOSTERING ECOSYSTEMS ALONG OUR HIGHWAY NETWORK

01

ur dedication to fostering thriving ecosystems along our highways stems from a profound understanding that these efforts contribute significantly to the overall ecological health and sustainability of the areas in which we operate. Reflecting a deep-seated commitment to preserving and enhancing biodiversity, we are cognisant of going beyond infrastructure development.

> EDIBLE GARDEN AT KAJANG SILK (E-GARDEN)

WHAT

WHERE

WHY

Kajang SILK.

Empowerment.

Nr

Spicing Up Sustainability: Fresh chilies from our Office Edible Garden.

-

An edible garden cultivated on open

Pilot project at Sg. Balak Toll Plaza,

The 'Edible Garden at the Office' is a dynamic space that promotes sustainability, wellness, innovation and

efficient utilisation of space.

'E' represents our 6E principles:

Encouragement, Education and

Edible, Environment, Engagement,

spaces around our highway offices and

designed as smart urban agro-gardens.

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OUR IMPACT STORY

EDIBLE GARDEN AT KAJANG SILK

ur 'Edible Garden at the Office,' a pilot project launched at Sungai Balak, Kajang SILK, is a dynamic space embodying sustainability, wellness, innovation, and efficient space utilisation. Themed around the concept of 6T - Tanam, Tinggal, Tuai, Tersusun, Terapi, Tenang - the project reflects our goals aligned with the 6E principles of Edible, Environment, Engagement, Encouragement, Education, and Empowerment.

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6 KEY PRINCIPLES

EDIBLE

Fostering health and wellness: With fresh, organic produce, our garden encourages a healthy lifestyle and promotes wellbeing and mindful eating.

Creative upcycling and waste reduction: Our approach to reduce waste through recycling demonstrates our commitment to environmental stewardship.

Optimising office space: By transforming under-utilised spaces into a green area, we maximise our office environment to make it more vibrant and productive.







Enriching skills and connection with nature: More than merely an activity for relaxation; gardening is a practical way to learn valuable agricultural skills and deepen our bond with the environment.

EDUCATION

- **Empowering self-reliance:** Growing our own food enhances food security, empowering us with self-reliance and resilience.
- Cultivating sustainability: We are nurturing an environmentally-responsible culture, inspiring our team to embrace sustainable practices in and out of the office.

EMPOWERMENT

Innovating through smart agriculture: We explore and implement smart agricultural techniques, fostering innovation to stay at the forefront of modern, sustainable gardening practices.







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02

GREEN

PLEDGE OF

HABITAT

RESTORATION

n PROLINTAS, environmental stewardship is a key principle that reaches far beyond the confines of operational sites, reflecting a profound commitment to the broader ecosystem. This dedication to environmental protection is evident in the efforts to preserve diverse plant and animal life, acknowledging the link between company operations and the wider ecological landscape. By nurturing environments beyond operational areas, we actively safeguard and enhance natural habitats, showcasing an understanding of the importance of environmental balance and the protection of natural resources for future generations.



three metre intervals in a grid planting system.

for identification.

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DESCRIPTION

The pledge underscores our dedication towards habitat restoration to maintain a balance between infrastructure progress and environmental sustainability.

TARGET

We are committed to restore any loss of habitat arising from our development of highways, including where necessary, the creation of new habitats at other locations to ensure no net loss in overall biodiversity.

COMMITMENT

We practice sustainable planning to ensure our highway resolved to substitute every tree felled with two trees planted elsewhere.

INITIATIVES

FOREST RESTORATION PROGRAMME

We are collaborating with the Federal Territory Forestry Department to reforest and rejuvenate the biodiversity in parts of the Sungai Besi Forest Reserve. To date, we have planted 14,000 saplings of various tree species such as champhor (drybalanops aromatica) and kandis burung (garcinea merguensis) on 11.33 ha, equivalent to 22 football fields.

EFFORTS TO REVIVE CRITICALLY-ENDANGERED SPECIES

We prioritise the planting of tree species such as balau sengkawan air (shorea sumatrana) that are listed as criticallyendangered on the International Union for Conservation of Nature (IUCN) red list.

PRIORITISING SYMBOLS OF NATIONAL BIODIVERSITY

One of the selected species, pokok merbau (instia palembanica), was declared as a National Tree to symbolise the strength and endurance of Malaysians.

alignments circumvent critical ecosystems such as forests and wetlands. Where not possible, we are

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OUR PERFORMANCE

e track performance and monitor the via metrics including the scale of areas set aside for green and landscaping projects measured against the cumulative area of our highway infrastructure.

INTENSITY OF OUR GREEN PROJECTS

11.33 ha Total area of green projects beyond our boundaries



NATIVE FRUIT TREES

1,120 Artocarpus lanceifolius Keledang-keledang

723 Baccaurea motleyana Rambai

200 Bouea macrophylla Kundang

235 Citrus x clementina Kiat

105 Durio zibethius **Durian Kampung** 78 Elateriospermum tapos Perah

468 Eugenia claviflora Keriang Bol

470 Eugenia malaccensis Jambul Bol

30 Garcinia merguensis Kandis Burung

132 Irvingia malayana Pauh Kijang

50 Lansium domesticum Langsat Hutan

85 Lepisanthes alata Perupok

100 Mangifera odorata Kuini

250 Pometia pinnata Kasai

247 Parkia sp. Petai

FOREST TREES

1,000

Casuarina equisetifolia Rhu Pantai

800 Dryobalanops aromatica Kapor

2,000 Hopea odorata Merawan Siput Jantan 1,000 Intsia palembanica Merbau

1,000 Shorea leprosula Meranti Tembaga

2,000 Shorea parvifolia Meranti Sarang Punai

> 14,000 **Grand Total**

450 Parkia sp. Petai

80 Sandoricum koetjape Sentul

177 Syzygium polyanthum Salam

5,000 Total



9.000

Jambul Bol

Total

Eugenia malaccensis



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GOING FORWARD

ROLINTAS remains dedicated to biodiversity conservation. We will prioritise initiatives supporting and enhancing biodiversity in and around our project areas.

Through proactive measures and innovation, we aim to integrate biodiversity considerations into our operations for the long-term health of ecosystems.