



BEM REGISTRATION OF ROAD SAFETY AUDITORS

Presented by:

Ir. Hj Anuar Bin Mohd Aris

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CONTENT

- 1.0 BACKGROUND**
- 2.0 ROAD SAFETY AUDIT**
- 3.0 CURRENT ROAD SAFETY ISSUES**
- 4.0 BEM ROAD SAFETY AUDITOR REGISTRATION**

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1.0 BACKGROUND

In 1985 – Improvement of Road Traffic Accident Recording and Analysis System in Malaysia published by UN ESCAP

In 1990 – Embarked on Road Accident Reduction Program targeting 30% Reduction by 2000 (3E's Approach : Education, Engineering and Enforcement)

In 1994 – JKR Road Branch introduced Road Safety Auditing. Made mandatory for all new road implemented under the 7th Malaysian Plan (1996-2000)

In 1997 – JKR set up Road Safety Section to enhance and coordinate road safety activities.

Published the Guidelines for the Safety Audit of Roads in Malaysia

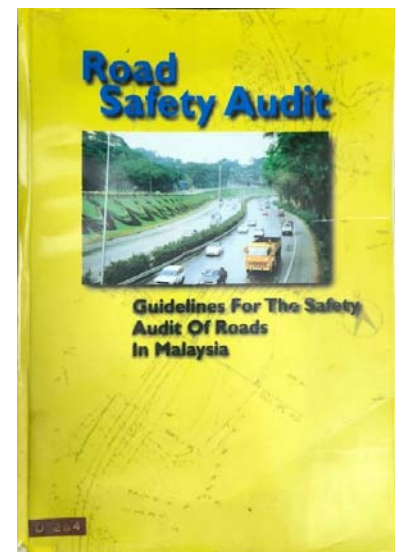
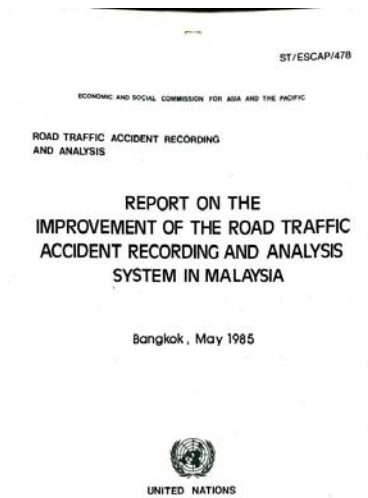
In 2000 – JKR started to undertake certification of Road Safety Auditor

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Local Publications



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International Publications

- Road Safety Audit, HD19/03, forming part of the UK Design Manual for Roads and Bridges, November 2003;
- FHWA Road Safety Audit Guidelines, Publication No. FHWA-SA-06-06, 2006;
- Institution of Highways and Transportation, Road Safety Audit, October 2008;
- Austroads, Guide to Road Safety Part 6: Road Safety Audit, Austroads publication No. AGRS06/09, January 2009;
- Road Directorate, Ministry of Transport, Denmark; Manual of Road Safety Audit, 2nd edition, 1997;
- Road Safety Audit for Roads: An Operational Tool Kit, Asian Development Bank, Manila, June 2003;
- PIARC Technical Committee on Road Safety (C13) Road Safety Manual, Version 1, 2003;
- Road Safety Audits, National Roads Authority, Ireland, July 2004;
- Department for Transport, Manual for Streets, First edition, 2007, and
- Road Safety Audit Manual for Dubai, Draft First edition, 2008.

- Manual of Road Safety Audit – Denmark (1997)
- Road Safety Audit Guidelines – University of New Brunswick (1999)
- Safety Audit Handbook – Turkey (2001)
- Manual of Road Safety Audit – Ghana (2002)
- Guide d'Audit – Sécurité des Infrastructures Routières – Maroc (2003)
- Road Safety Audit Manual – Uganda (2004)
- Road Safety Audit Manual (Draft) – Federal Democratic Republic of Ethiopia (2004)
- FHWA Road Safety Audit Guidelines (2006)
- Manuel d'Intégration de la Sécurité Routière aux Projects Routiers – Benin (2007)
- Manuel d'Intégration de la Sécurité Routière aux Projects Routiers – Maroc (2007)
- Road Safety Audit Guidelines – Chartered Institute of Highways and Transportation UK (2008)
- Guide to Road Safety - Part 6 Road Safety Audit Austroads (2009)
- A Guide to Road Safety Auditing v7 – United Republic of Tanzania (2009)
- Design Manual for Roads and Bridges Part 1b) Road Safety Audit - Kenya (2009)
- Manual on Road Safety Audit – Indian Roads Congress (2010)
- Consultancy Services for Road Safety Audit of the Main Road Network Final Report – Mozambique (2010)
- Safety Manual for Secondary Roads – Pilot4Safety (2010)
- Road Safety Audit Guidelines for Safety Checks on New Projects – PIARC (2011)
- Safety Audit Manual – Idaho (2011)
- South African Road Safety Audit Manual (2nd Edition) – South Africa (2012)
- Guidelines for Mainstreaming Road Safety in Regional Trade Corridors – SSATP (2013)
- Guidelines for Road Safety Audit Karnataka (2013)
- Road Safety Audit Procedures for Projects – Interim Release New Zealand (2013)
- Road Safety Engineering for Indonesian Roads (pg. 98-123) (2013)
- AFD Road Safety Manuals for Africa - New Roads and Schemes: Road Safety Audit (2014)
- Regional Road Safety Audit Guidelines – TRACECA (2014)
- Road Safety Engineering Manual -Draft - Malawi (2014)
- Design Manual for Roads and Bridges HD 19/15 Road Safety Audit – UK (2015)
- CAREC Road Safety Engineering Manuals – 1. Road Safety audit (2017)

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4

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1.2 Roles And Responsibilities

Road Designer	:	To produce road design according to the Guideline and best engineering practice with adherence to road safety requirements and taking into account of social, environmental and traffic impact to the surrounding area, with due consideration of cost implication to the client.
Design Checker	:	To verify road design follows the Guideline and best engineering practice inclusive of road safety requirements, taking into account of the social, environmental and traffic impacts to the surrounding area.
Independent Checker:		Third party to recheck and verify road design follows the Guideline and best engineering practice, inclusive of road safety requirements, without being biased towards any party.
Road Safety Auditor	:	To ascertain that the road design takes into consideration the road safety requirements and the incorporation of mitigation measures required due to circumstances which may compromise certain aspects of the design due to some constraints.



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5

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2.0 ROAD SAFETY AUDIT

RSA is a **formal process** of examination of the detail of a new project or of an existing road, to identify the accident potential and expected safety performance of the project (or road)

RSA is an accident prevention technique

RSA have the aim :

‘Getting It Right The First Time’

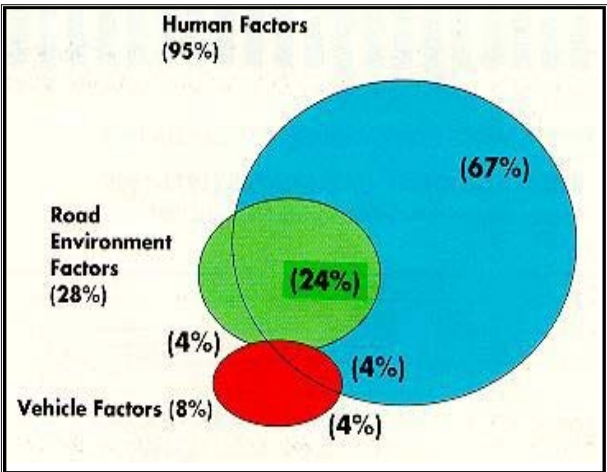
ROAD SAFETY AUDIT (RSA) Goal :

- Ensure roads provide highest **Practicable Standard** of traffic safety for **ALL** road users.

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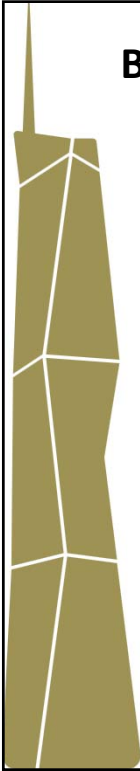
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FACTORS CONTRIBUTING TO TRAFFIC ACCIDENTS
SOURCE : AUSTROADS (1994)

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7



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Who is a Road Safety Auditor?

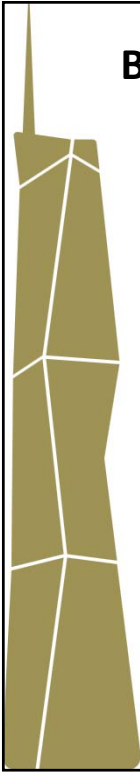
Specialist Person (or Team), Qualified and Experienced in Road Safety Management, with good background knowledge of Road Design and Traffic Management.

- A good understanding of the ‘Human Factors’ associated with traffic operations, Good conceptual skills, to be able to “visualize” the project from the plans, as the driver will see it.
- Independence from the original planners, designers or ‘builders’.


A practicing professional with experience and capabilities in road design, traffic engineering, traffic / transport management, road construction techniques, road safety engineering, road user behaviour or another closely related road safety discipline, who is qualified to undertake road safety audits and has recent and regular demonstrated experience in conducting road safety audits.

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9



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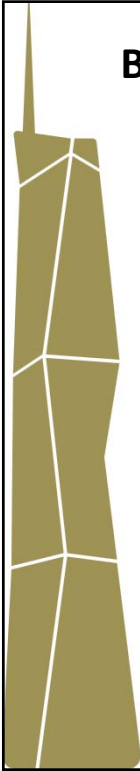
Stages of RSA under JKR Guidelines

Five (5) Stages generally adopted for new projects but this may depend on the project size, complexity and / or resources available.


* Planning/Feasibility Stage	(Stage 1 Audit)
* Draft/Preliminary Design Stage	(Stage 2 Audit)
* Detailed Design Stage	(Stage 3 Audit)
* Pre - Opening	¹⁰ (Stage 4 Audit)
* Existing Roads In Operation	(Stage 5 Audit)

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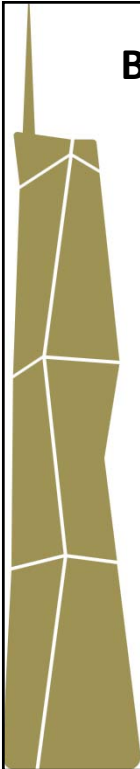
EMPOWERING ENGINEERING

Who Implements RSA?


- Needs an organisational commitment to road safety objectives. (JKR, LLM, Local Authorities)
- Need for objective in decision making,
- Authority to make decision on the necessary action,
- Accountability for the outcome.

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11



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EMPOWERING ENGINEERING

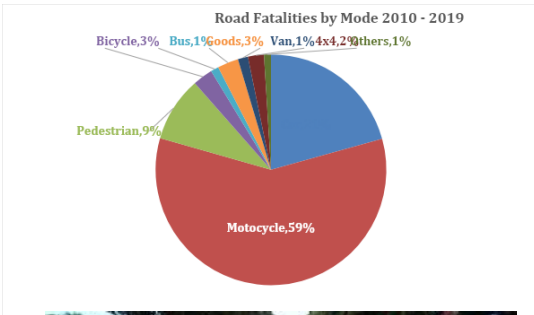
ACTION	RESPONSIBILITY
Step 1. Preparing Audit Brief; Appointing the Auditor(s), Appointing the Independent Assessor.	Client / Designer / Construction Manager
Step 2. Assembling Background; Information, Plans to be audited	Client / Designer / Construction Manager
Step 3. Initial Meeting with Auditor (s); Handing over of plans etc for audit; Discussions; arrangement for inspections etc.	Client / Designer / Construction Manager
Step 4. Doing the Audit, examining the plans, site inspections etc.	Auditor (s)
Step 5. Preparing the Audit Report	Auditor (s)
Step 6. Completion Meeting (if required), Presentation and discussion of Audit Findings.	Client / Designer / Auditor / Authority
Step 7. Deciding the action required on the Audit findings	Client / Designer / Auditor / Authority

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12

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3.0 Current Road Safety Issues



The highest road fatalities (59 percent) are coming from motorcyclists, while 21 percent of fatalities are attributed to passenger cars among various road users



<https://www.mot.gov.my/en/land/safety/malaysia-road-fatalities-index>

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1.35 mil deaths and 50 mil injuries worldwide/yr, (90% of the reported death in developing countries.)

Place burden on health systems and other services

Affects communities and individuals.

World Bank statistics, in low-and middle-income countries (LMICs) alone, deaths and serious injuries cost economies 1.7 tri dollars and over 6.5% of GDP.

UN 2030 Agenda for Sustainable Development recognizes that road safety is a prerequisite to ensuring healthy lives, promoting well-being, and making cities inclusive, safe, resilient, and sustainable.

UN Decade of Action for Road Safety 2011–2020 goal : stabilize and reduce traffic deaths

UN 2nd Decade of Action for Road Safety 2021-2030 goal : to reduce road traffic deaths by 50%

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14

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402,626 road accidents recorded in Malaysia from Jan-Sept 2022, with 4,378 fatalities – PDRM statistics.

As shared by Transport Minister Anthony Loke, a total of 915,874 road accidents were recorded throughout 2021 and 2022.

In 2022 alone, there were a total of 545,588 road accidents reported and a total of 6,080 deaths.

That's an average of 1,494 accidents per day or an accident every minute in Malaysia.



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Based on value of statistical life' (VSOL) year of 2018 by MIROS, the Malaysian government has lost at least 3.12 million for each life.

Malaysia Road Safety Plan 2014-2020

Set target of reducing 50% road accident fatalities from projected 10,716 fatalities in 2020 to 5,358 fatalities

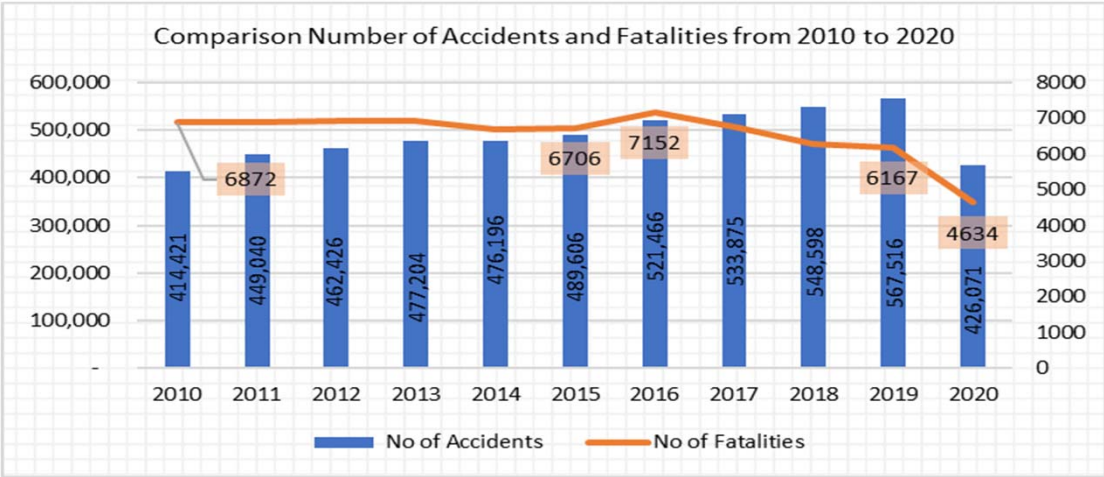
(United Nations Decade of Action for Road Safety 2011-2020 goal to stabilize and reduce the forecast level of road accident fatalities by 50% by 2020.)

Malaysia Road Safety Plan 2014-2020, we have successfully recorded a reduction rate of 4.8% yearly in terms of the number of fatalities from road traffic crashes.

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16

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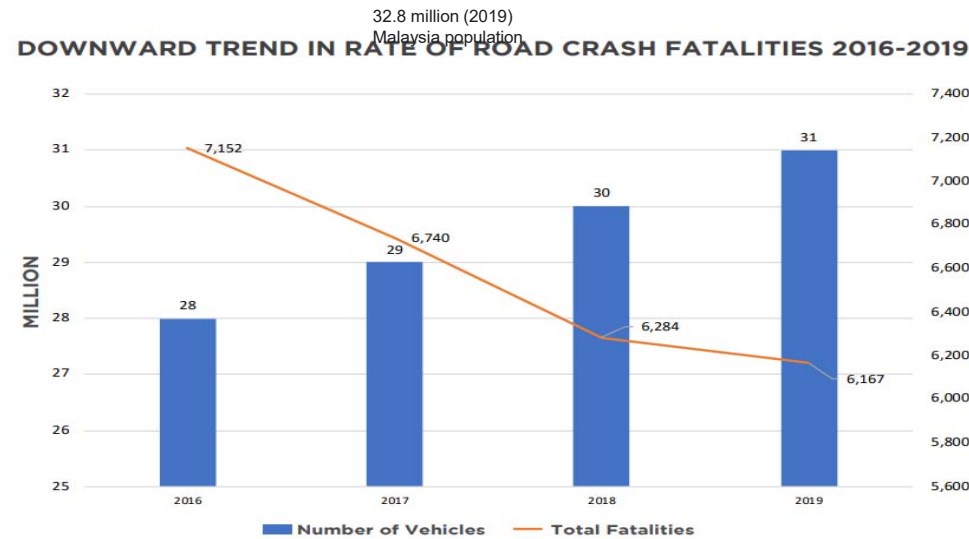


Source : <https://www.mot.gov.my/en/land/safety/road-accident-and-facilities> MIROS

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17

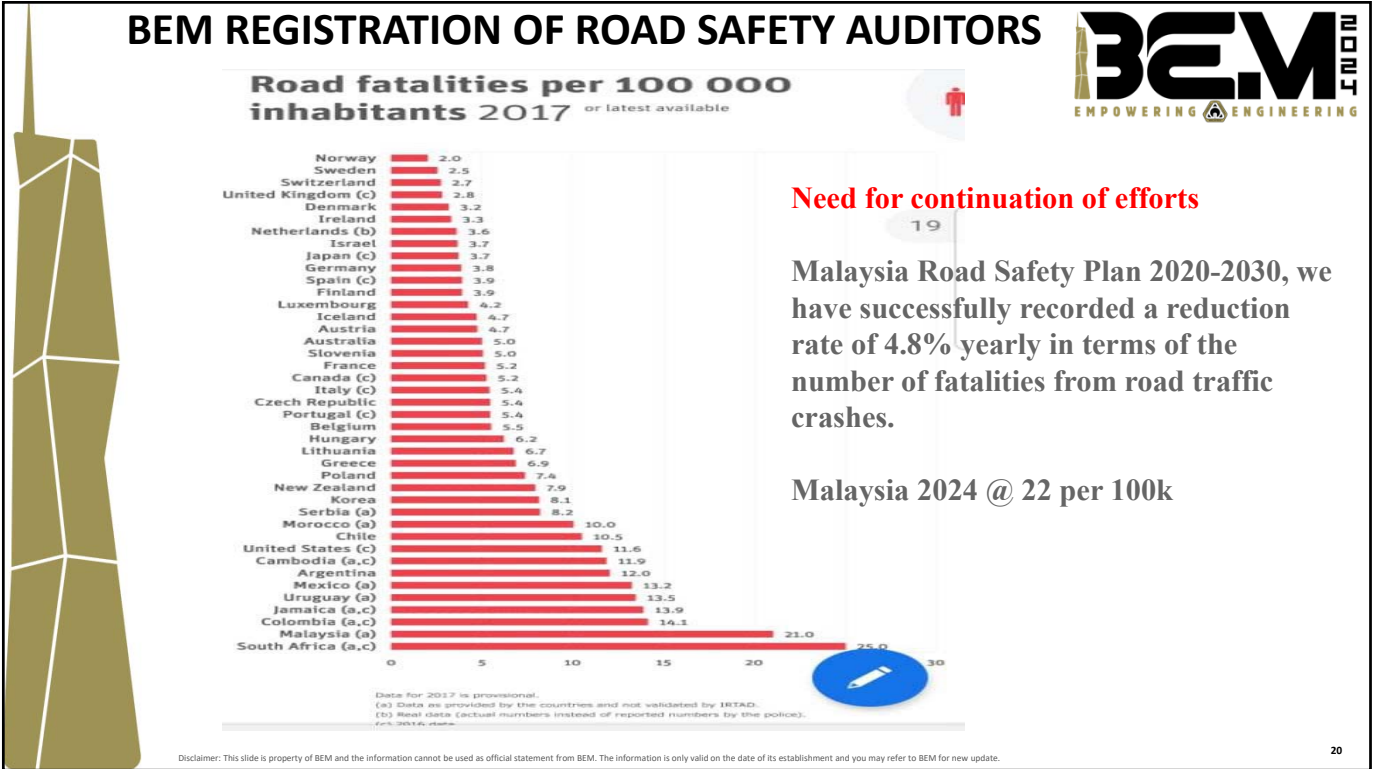
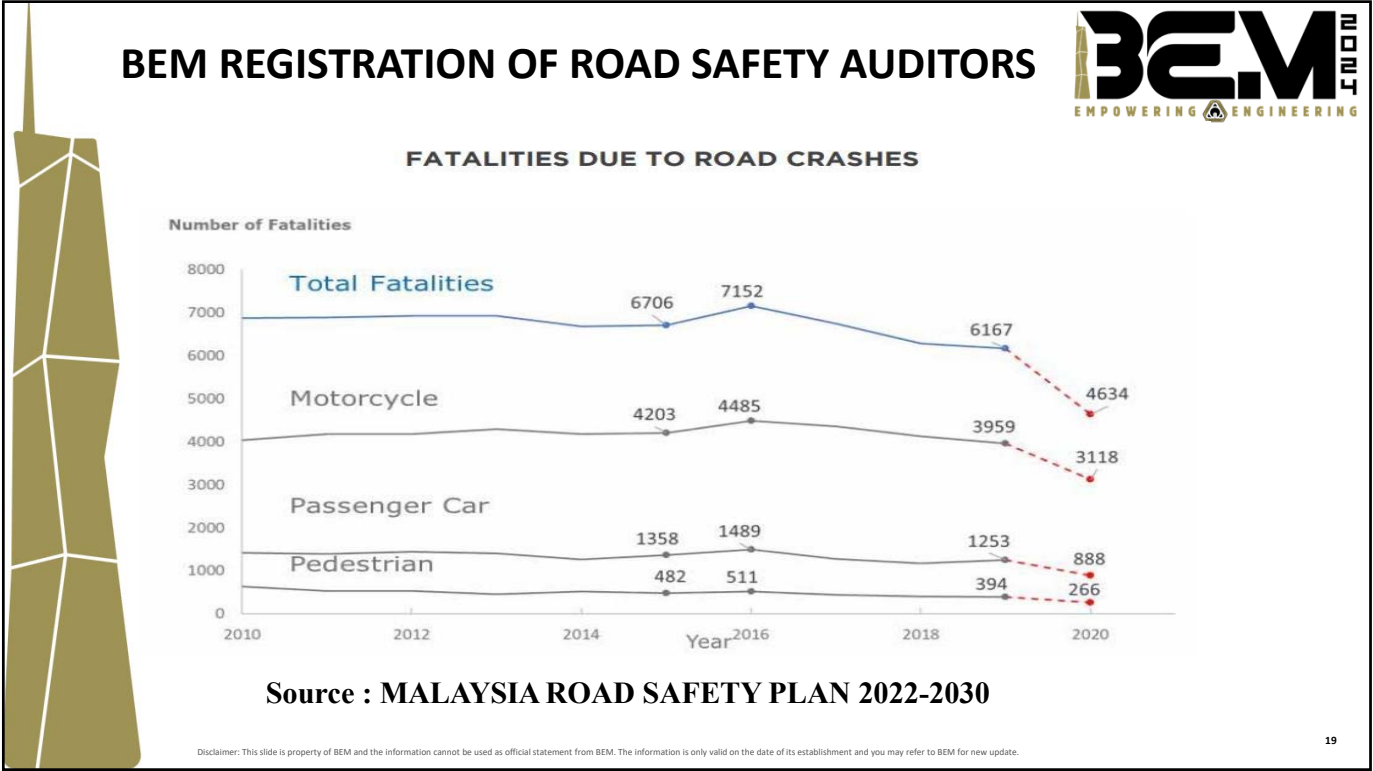
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Source : MALAYSIA ROAD SAFETY PLAN 2022-2030

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18



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4.0 BEM Road Safety Auditor Registration

Road Safety Audits are a pro-active approach to road safety management that also includes accident investigation and safety ratings of roads by the relevant road agencies and local authorities and revising safety standards / regulations.

Dec 2011 – BEM agreed in principle to undertake to be the accrediting body for RSA

Feb 2021 – BEM setup RSA WG consisting of members from relevant BEM committees and JKR. THE WG was to formulate the appropriate criteria and procedure for the accreditation and registration of Road Safety Auditor (JKR has a total 45 Certified Road Safety Auditor since 2000)

A Road Safety Auditor must be Registered with the BEM effective : 1st August 2023.
(JKR certified auditors were given saving rights)

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21

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Road Safety Auditor is now categorized as a sub branch under the Civil engineering branch.

To be A Registered RSA he / she must have all of the following qualifications and experience:-

- i) Be a practicing Professional Engineer with Practicing Certificate registered under the Act in the Civil engineering branch;**
- ii) Have at least 3 years working experience in Road Engineering Design**
- iii) Have at least 2 years working experience in Road Safety Engineering**
- iv) With involvement in Road Construction for more than 2 years**
- v) Have obtained a prequalification certificate recognized by BEM such as REAM or other approved organization.**
- vi) Has attended and passed the interview conducted by the interviewers appointed by the Board.**

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APPLICATION FOR REGISTRATION

Applications shall:

1. Be made through MyBEM Online Registration System or by hand through by submitting Form;
2. Be accompanied by a copy of CV on the qualifications and practical experience highlighting the specific areas and level of responsibilities involved in the project(s);
3. Be accompanied by 3 copies of actual audit reports done by the applicant.
Applicant should have adequate hands-on experience in actual road safety audits and

REGISTRATION FEE

A registration fee of RM200.00 and a processing fee of RM50.00 shall be paid at the time of application.

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23

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Submit the following:-

1. *Application Form*
2. *Statement of Work Experience and Latest CV*
3. *Submit 2 copies of reports in which the candidate is a member of a RSA Team covering at least Audit Stages 2, 3 and 4 part 3 involving highway and junctions.*

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24

2526

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Statement of Work Experience and Latest CV

Statement of Work Experience

Appendix 1

Name of Application:

Date i.e. relating to each appointment (months and years)	Statement of Experience	Duration Experience For Each Project (months) (a)	Road Design Works (months) (b)	*Road Safety Related Works (months) (c)	Other Civil Engineering Works (months) (d)	Verification i. Authorized ii. Name Of Signatory iii. Position Of Signatory (at least Director of Company) iv. Official Stamp of Company
	<u>COMPANY DETAIL</u> 1. Company Name: 2. Tel. No: 3. Company Address:					
	<u>PROJECT DETAIL</u> 1. Project Title: i. Designation: ii. Detail Job Description (Related To Road Design Works And Road Safety Work i.e. b and c only):					
	Sub Total (months)					

*Road Safety Works Limited To

- i) Road Safety Auditing
- ii) Accident Investigation And Countermeasures
- iii) Design Of Traffic Management Plan (TMP) During Construction

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27

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Submit 2 copies of reports in which the candidate is a member of a RSA Team covering at least Audit Stages 2, 3 and 4 part 3 involving highway and junctions.

JABATAN KERJA RAYA NEGERI JOHOR

PROJEK CADANGAN MENAIK TARAF JALAN SEDIA ADA
DARI KG. KAHANG KE TAMAN NEGERI ENDAU ROMPIN,
JOHOR DARUL TAKZIM PAKEJ SELATAN KG. KAHANG
KE SG. EMAS UNTUK MAJLIS PEMBANGUNAN WILAYAH
EKONOMI PANTAI TIMUR COUNCIL (ECERDC)

ROAD SAFETY AUDIT STAGE 1 [PLANNING & FEASIBILITY] AUGUST 2023

JABATAN KERJA RAYA NEGERI JOHOR
Jabatan Jalan,
Ara 3, Bangunan Darul 'Abdul Rahman Aundh,
Kota Iskandar,
79102, Iskandar Puteri,
Johor Darul Takzim

Developer
EAST COAST ECONOMIC REGION
DEVELOPMENT COUNCIL (ECERDC)
Level 69, Tower 2, Persiaran Teras Towers,
Kuala Lumpur City Centre,
50088 Kuala Lumpur


C&S Consultant
ZAIIDUN LEEENG-SIN, BHD.
6th Floor, Bangunan MNC,
Jalan Bukit Nanas,
50250 Kuala Lumpur

PREPARED BY:
B. Shahrul Ali-Hafiz Shahrul Husein
Accreditation No:
JKR/CIOG/TAJKR/01-07-2005

**ENDEAVOUR
CONSULT SON BHD**
101, Jalan Pagar Utama, 100000

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47801 Presint Jaya,
Selangor Darul Eslam,
Tel: 03-78457262
Fax: 03-78457159

Email: edc@endeavourconsult.com.my




JABATAN KERJA RAYA NEGERI JOHOR

PROJEK CADANGAN MENAIK TARAF JALAN SEDIA ADA DARI KG. KAHANG KE TAMAN NEGERI ENDAU ROMPIN, JOHOR DARUL TAKZIM PAKSI SELATAN KG. KAHANG KE SG. EMAS UNTUK MAJLIS PEMBANGUNAN WILAYAH EKONOMI PANTAI TIMUR COUNCIL (ECERDC)

PROJEK CADANGAN MENAIK TARAF JALAN SEDIA ADA DARI KG. KAHANG KE TAMAN NEGERI ENDAU ROMPIN, JOHOR DARUL TAKZIM PAKSI SELATAN KG. KAHANG KE SG. EMAS UNTUK MAJLIS PEMBANGUNAN WILAYAH EKONOMI PANTAI TIMUR COUNCIL (ECERDC)

ROAD SAFETY AUDIT STAGE 2
[PRELIMINARY DESIGN STAGE]
AUGUST 2023




JABATAN KERJA RAYA NEGERI JOHOR
 Bahagian Jalan,
 Aras 1, Basement Darat, Abadi Ekaanan Andal,
 Kota Iskandar,
 79102, Iskandar Puteri,
 Johor Darul Takzim, Malaysia

Developer:
EAST COAST ECONOMIC REGION
DEVELOPMENT COUNCIL (ECERDC)
 Level 69, Tower 2, Petronas Twin Towers,
 Kuala Lumpur City Centre,
 50088 Kuala Lumpur

C&S Consultant:
ZADIN-LEENG SDN. BHD.
 69, Floor, Basement Ming,
 Jalan Bukit Nuan,
 50150 Kuala Lumpur

PREPARED BY:
 1. Shakh Ali Huda Shakh Hassan
 Accreditation No:
 JKR-CKO/TAR/21/07/2005

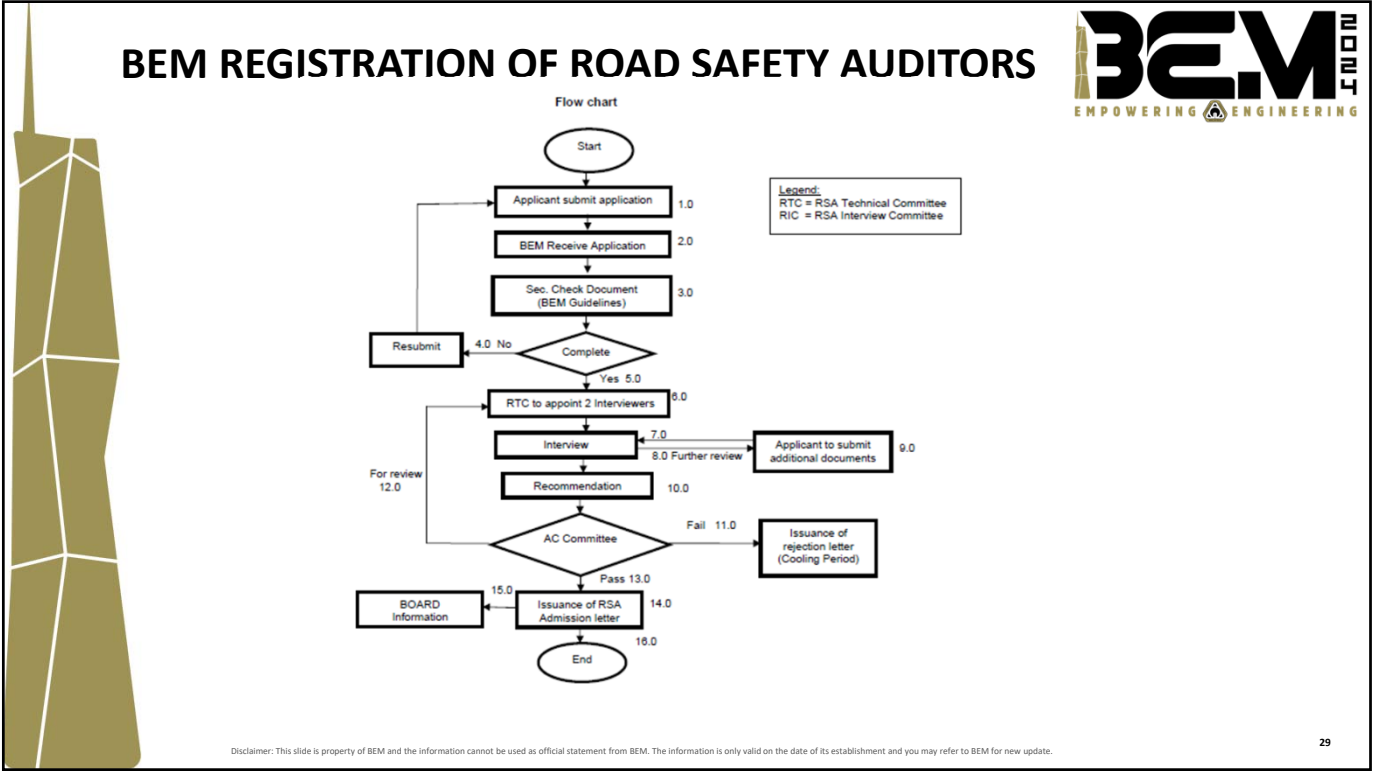


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CONSULT SDN BHD
INCORPORATED IN MALAYSIA


**No. 8, Jalan P37/ 1A/20B,
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28



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Applicants that has submitted the necessary application forms and documents shall be interviewed by 2 Assessors selected by BEM from a panel of Assessors.

To Date : 4 Applications Received.

2 Passed the interview

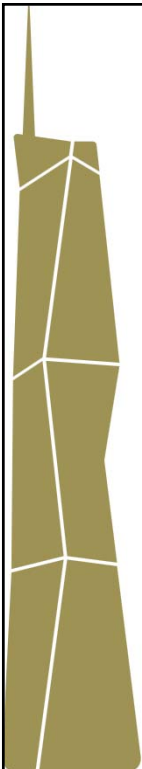
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30



THANK YOU

BOARD OF ENGINEERS MALAYSIA
Tingkat 11 & 17, Blok F Ibu Pejabat JKR
Jalan Sultan Salahuddin, 50580 Kuala Lumpur
<http://www.bem.org.my>
enquiry@bem.org.my or complaint@bem.org.my.
Tel: 03-26912090; Fax: 03-26925017



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