
14. **DIRECTORS' REPORT**

(Prepared for inclusion in this Prospectus)

 **PROTASCO BERHAD** Registered Office:

Level 14, Unit 14-1
1, Jalan SS21/58
Damansara Uptown
47400 Petaling Jaya
Selangor Darul Ehsan

20 June 2003

The Shareholders
Protasco Berhad

Dear Sir/Madam

On behalf of the Directors of Protasco Berhad ("Protasco"), I report after due inquiry that during the period from 31 December 2002 (being the date to which the last audited accounts of Protasco and its subsidiaries ("Protasco Group") have been made up) to 20 June 2003 (being a date not earlier than fourteen (14) days before the issue of this Prospectus):

- (a) The business of the Protasco Group has, in the opinion of the Directors, been satisfactorily maintained;
- (b) In the opinion of the Directors, no circumstances have arisen subsequent to the last audited accounts of the Protasco Group which have adversely affected the trading or the value of the assets of the Protasco Group;
- (c) The current assets of the Protasco Group appear in the books at values, which are believed to be realisable in the ordinary course of business;
- (d) Save as disclosed in this Prospectus, there are no contingent liabilities by reason of any guarantees or indemnities given by the Protasco Group; and
- (e) Save as disclosed in this Prospectus, there have been, since the last audited accounts of the Protasco Group no changes in the published reserves or any unusual factors affecting the profit of the Protasco Group.

Yours faithfully
For and on behalf of the Board of Directors
of **PROTASCO BERHAD**



DATO' CHONG KET PEN

15. VALUATION CERTIFICATE

(Prepared for inclusion in this Prospectus)

Date : 20th June 2003

The Board of Directors
PROTASCO BERHAD
Taman Ilmu Ikram (Ikram Park)
Jalan Serdang
43000 Kajang
Selangor Darul Ehsan

Australia - Sydney - Adelaide - Brisbane - Gold Coast -
Hobart - Melbourne - Perth - Sunshine Coast

Europe - United Kingdom - Belgium - Finland - France
Germany - Greece - Ireland - Italy - Netherlands - Spain

South Africa

USA

Dear Sirs

REPORT AND VALUATION OF

1. **Taman Ilmu Ikram (Ikram Park), Jalan Serdang 43000 Kajang , Selangor Darul Ehsan located on Lot No. P.T. 2158, Mukim of Dengkil, District of Sepang , State of Selangor Darul Ehsan. [30V020097]**
2. **No. 1276 & 1277, Jalan Sri Putri 3/5, Taman Putri 81000 Kulai, Johor Darul Ta'zim locted on Lot Nos. 28401 & 28402, Mukim of Senai-Kulai, District of Johor Bahru , State of Johor Darul Ta'zim. [70V2001165]**
3. **Premises Nos. 3 & 5, Jalan Arowana Satu, Kawasan Perniagaan Arowana 13500 Permatang Pauh, Pulau Pinang erected on Lot Nos. 1576 & 1577, Mukim 4, Seberang Perai Tengah, Pulau Pinang. [40SC2002/030]**

This letter has been prepared for inclusion in the Prospectus of Protasco Berhad to be dated on and about 28 June 2003 in connection with the Public Issue of 48,854,000 new ordinary shares of RM0.50 each and Offer for Sale of 19,600,000 ordinary shares of RM0.50 each pursuant to the listing of and quotation for its entire issued and paid-up share capital of 300,000,000 ordinary shares on the Main Board of The Kuala Lumpur Stock Exchange.

In accordance with your instructions, we have valued the above-mentioned properties (hereinafter referred to as 'the subject property'), vide our valuation reports bearing reference Nos. 30V020097, 70V2001165 and 40SC2002/030 dated 8 May 2002, 28 April 2002 and 30 April 2002 respectively.

We have prepared the Valuation Reports in accordance with the Guidelines on Asset Valuations issued by the Securities Commission, Malaysia (1995) and also the Manual of Malaysian Valuation Standards issued by the Board of Valuers, Appraisers and Estate Agents.

...2/-

Rahim & Co Chartered Surveyors Sdn. Bhd. (6943)
Wisma Jayanita, 64 Jalan Raja Muda Abdul Aziz,
50300 Kuala Lumpur, Malaysia.
Tel: 603-2691 9922 Fax: 603-2691 9992
e-mail: rccs@po.jaring.my
website: www.rahim-co.com

Alor Setar - Ipoh - Johor Bahru - Kota Bharu -

15. VALUATION CERTIFICATE *(Continued)*



2/-...

The basis of the valuation is to ascertain the Market Value of the subject property on 'as is' basis as at 18th April 2002. We have applied the Comparison and Investment Methods of Valuation, whichever is relevant, in arriving at the Market Value of the subject property. We have also relied upon the information provided to us by the client such as the building plans, copy of the document of titles and financial reports. Copies of these documents are attached as appendices in the valuation reports.

Our opinion of the Market Value of the subject property and its brief details are attached in the Schedule of this letter.

Yours faithfully

RAHIM & CO CHARTERED SURVEYORS SDN BHD

CHEE KOK THIM

Senior General Manager
Registered Valuer (V 325)

15. VALUATION CERTIFICATE (Continued)



File Reference/ Title/Location	Beneficial/ Registered Owner/Postal Address	Description	Tenure	Market Value (RM)	Method of Valuation	Material date of valuation
30V020097/ H.S. (D) 1169, P.T. 2158, Mukim of Dengkil, District of Sepang, State of Selangor Darul Ehsan/ Taman Ilmu Ikram (IKram Park), Jalan Serdang 43000 Kajang, Selangor Darul Ehsan	Pesuruhjaya Tanah Persekutuan/ Taman Ilmu Ikram (IKram Park), Jalan Serdang 43000 Kajang, Selangor Darul Ehsan	An institution centre but with the master plan approved for institution, commercial and residential uses	Freehold	112,000,000	Comparison	18.04.2002
70V2001165/ G63006 & G63007, Lot Nos. 28401 & 28402, Mukim of Senai-Kulai, District of Johor Bahru, State of Johor Darul Ta'zim./ No. 1276 & 1277, Jalan Sri Putri 3/5, Taman Putri 81000 Kulai, Johor Darul Ta'zim.	Kumpulan Ikram Sdn Bhd./ No. 1276 & 1277, Jalan Sri Putri 3/5, Taman Putri 81000 Kulai, Johor Darul Ta'zim.	Land with 2- adjoining units of 1½ storey light industrial terraced factory	Freehold	800,000	Investment & Comparison	18.04.2002
40SC2002/030/ Grant Nos. 53674 & 53675, Lot Nos. 1576 & 1577, Mukim 4, Seberang Perai Tengah, Pulau Pinang./ Premises Nos 3 & 5, Jalan Arowana Satu, Kawasan Perniagaan Arowana, 13500 Pematang Pauh, Pulau Pinang	Kumpulan Ikram Sdn Bhd./ Premises Nos 3 & 5, Jalan Arowana Satu, Kawasan Perniagaan Arowana, 13500 Pematang Pauh, Pulau Pinang	Land with two adjoining fully renovated three-storey shop/offices used as a single unit	Freehold	925,000	Comparison	18.04.2002

16. INDEPENDENT MARKET RESEARCH LETTER

47400 Petaling Jaya
Selangor Darul Ehsan, Malaysia
Tel: (603) 7728-0248
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Email: info@vitalfactor.com
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20th June 2003

The Board of Directors
Protasco Berhad
Level 14, Uptown 1
1 Jalan SS21/58
Damansara Uptown
47400 Petaling Jaya
Selangor Darul Ehsan

Dear Sirs

Assessment of the Road Construction, Rehabilitation and Maintenance Industry

The following is an extract of the Assessment of the Road Construction, Rehabilitation and Maintenance Industry in Malaysia prepared by Vital Factor Consulting Sdn Bhd for inclusion in the Prospectus of Protasco Berhad to be dated 28th June 2003 in relation to its listing on the Main Board of the Kuala Lumpur Stock Exchange.

1. Background

- Protasco Berhad and its subsidiary companies (collectively referred to as 'Protasco Group') are principally engaged in the provision of road infrastructure services, including road rehabilitation, road maintenance, road construction and engineering services in pavement evaluation, laboratory testing and structure evaluation.

2. Overview of the Road Construction, Rehabilitation and Maintenance Industry

- The Road Construction, Rehabilitation and Maintenance Industry which falls under the umbrella of the Infrastructure Construction Industry can be segmented as follows:

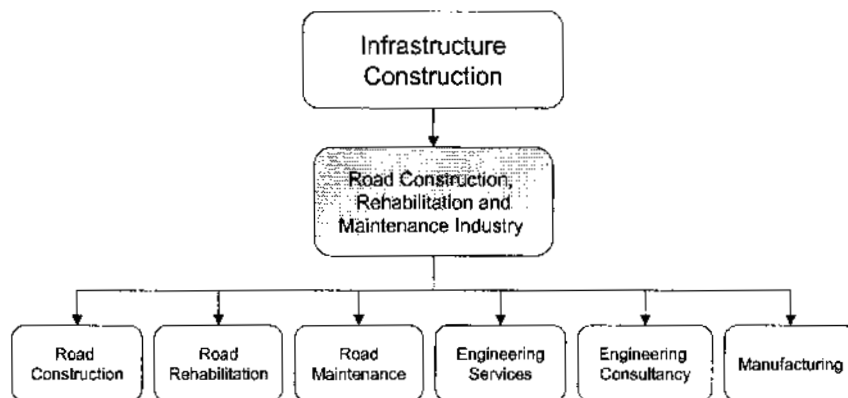


Figure 1 Segmentation of the Road Construction, Rehabilitation and Maintenance Industry

16. INDEPENDENT MARKET RESEARCH LETTER *(Continued)***VITAL FACTOR CONSULTING**

Creating Winning Business Solutions

- Whilst Road Construction is focused on the construction on new roads and highways, Road Rehabilitation is focused on upgrading, repairing and recycling of pavements.
- Road Maintenance involves road repairs as well as maintenance of road shoulders, roadside furniture, drainage systems, bridges, culverts, landscaping and grass cutting.
- Supporting services which are focussed on the Road Construction, Rehabilitation and Maintenance Industry include the following:
 - Engineering Services such as site investigation, soil testing, laboratory testing, instrumentation, monitoring, specialised geotechnical engineering works, and pavement and structural evaluation;
 - Engineering Consultancy in civil, structural and geotechnical engineering;
 - Manufacturing of road construction materials such as pavement materials and road furniture.

3. Industry Segmentation

- Road Construction, Rehabilitation and Maintenance can be vertically segmented into upstream, midstream and downstream activities as follows:

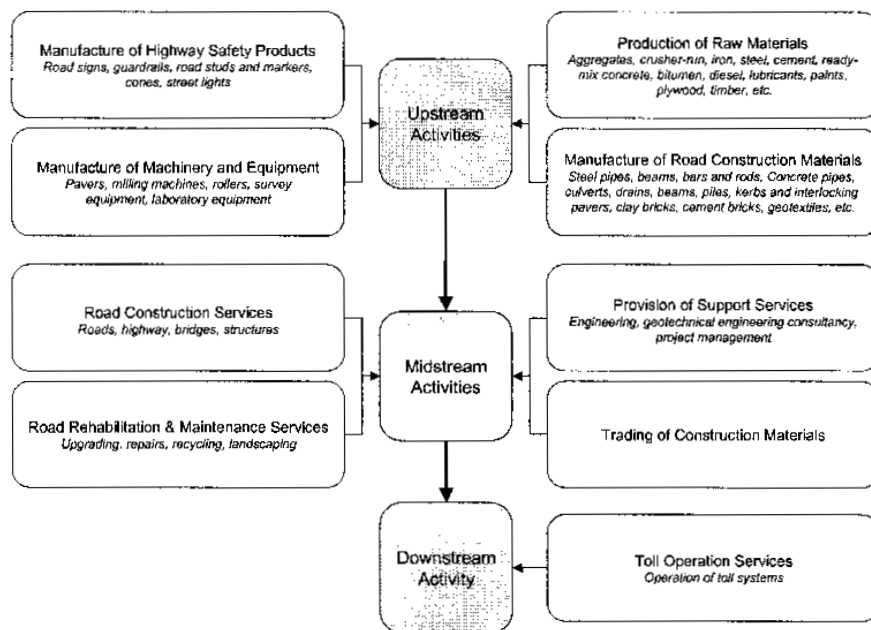


Figure 2 Vertical Segmentation of the Road Construction, Rehabilitation and Maintenance Industry

- The upstream sector of the Road Construction, Rehabilitation and Maintenance Industry essentially covers four main areas of activities:
 - Production of primary raw materials;
 - Manufacture of road construction materials;
 - Manufacture of highway safety products;
 - Manufacture of machinery and equipment.

16. INDEPENDENT MARKET RESEARCH LETTER (*Continued*)**VITAL FACTOR CONSULTING**

Creating Winning Business Solutions

- Midstream activities include:
 - Provision of road construction services;
 - Provision of road rehabilitation and maintenance services;
 - Provision of supporting services such as engineering services;
 - Trading of building construction materials.
- Downstream activity involves privatised toll highway road systems where concessions are awarded by the Government to private operators responsible for the operation of the toll facilities.

4. Government Legislations, Policies and Incentives**Registration of Contractors**

- It is mandatory for all builders, contractors and sub-contractors, whether local or foreign, to register with the Construction Industry Development Board Malaysia (CIDB), before undertaking any construction work in Malaysia.
- There are three categories of registration as follows:
 - Civil Engineering Construction;
 - Building Construction;
 - Mechanical and Electrical.
- In addition, all builders, contractors and sub-contractors must also register with Pusat Khidmat Kontraktor (PKK) of the Ministry of Entrepreneur Development prior to undertaking any public construction works.
- PKK classifies all registrations into two main categories, namely:
 - General Construction Works;
 - Electrical Works.

Levies

- All contractors and builders undertaking construction works above RM500,000 are required to pay a levy of 0.25% of the contract sum to CIDB. Failure to comply may result in a fine not exceeding RM50,000 or action will be taken on the contractor's registration, such as cancellation, suspension or revocation (*Source: Levy Procedures, Construction Industry Development Board*).

Environmental Regulations

- The Environmental Quality (Prescribed Activities)(Environmental Impact Assessment) Order 1987 requires an Environmental Impact Assessment (EIA) report to be prepared and submitted to the Director General of Environmental Quality for approval before the commencement of prescribed activities including those pertaining to the Construction of Expressway and National Highways, Primary roads, Secondary roads, Minor roads, Arterials, Collector roads and Local streets (*Source: Environmental Impact Assessment Guidelines of Highway or Road Projects, Ministry of Science, Technology and the Environment, Malaysia, 1995*).
- The concentration of pollutants of a waterway arising from a road construction project is regulated under the Environmental Quality Act, 1974 (*Source: Environmental Impact Assessment Guidelines of Highway or Road Projects, Ministry of Science, Technology and the Environment, Malaysia, 1995*).

16. INDEPENDENT MARKET RESEARCH LETTER (*Continued*)**VITAL FACTOR CONSULTING**

Creating Winning Business Solutions

- The impact of pollution arising from the traffic plying on a proposed road project is controlled under the Environmental Quality (Clean Air) Regulations 1978 (*Source: Environmental Impact Assessment Guidelines of Highway or Road Projects, Ministry of Science, Technology and the Environment, Malaysia, 1995*).
- The impact of noise arising from the construction and operation of a proposed road project is also controlled under the Environmental Quality Act. Vehicle noise is governed by the Environmental Quality (Motor Vehicle Noise) Regulations 1987 (*Source: Environmental Impact Assessment Guidelines of Highway or Road Projects, Ministry of Science, Technology and the Environment, Malaysia, 1995*).
- Contractors are required to comply with the Street, Drainage and Building Act, 1974, in relation to the construction and maintenance of streets, drainage and buildings under each respective local authority within West Malaysia (*Source: Street, Drainage and Building Act, Act 133 of 1974, all amendments up to September, 2000*).
- Contractors are also required to comply with the Occupational, Safety and Health Act, 1994, in relation to the safety, health and welfare of persons working in the Construction Industry (*Source: Occupational Safety and Health Act and Regulations, Act 514 of 1994, all amendments up to February, 2001*).

5. Barriers to Entry

- Barriers to entry into the Road Construction, Rehabilitation and Maintenance are **low to moderate**, mainly predicated by the ease of entry into the industry in terms of capital costs required, government regulations, technical skills and track record.

Capital Costs

- The capital requirements for setting up a viable road construction business (excluding land and building) are low.
- The set-up costs for a small contractor may be as low as RM10,000 to RM20,000 as rented machinery and equipment could be utilised for projects and portions of work could be subcontracted out.
- To qualify for a G7 ranking with the CIDB where it would be eligible to tender for contracts of unlimited value, a company is required to have a minimum paid-up share capital of RM750,000 (*Source: Construction Industry Development Board*).
- To be eligible for registration as a Class A contractor with PKK of the Ministry of Entrepreneur Development, the company is required to have a paid-up capital of above RM600,000.

Government Regulations

- Apart from registrations with the CIDB and PKK, there are no specific barriers to entry from the Government regulation perspective.

16. INDEPENDENT MARKET RESEARCH LETTER (Continued)



VITAL FACTOR CONSULTING
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- The following are the conditions for registration and grading for CIDB and PKK:

CIDB Grade	Paid-Up Capital/ Net Worth ² (RM)	Minimum Personnel Requirements ³	Tender Capacity (RM)
G1	5,000	Course Certificate/Experience	Not exceeding 100,000
G2	25,000	Course Certificate/Experience	Not exceeding 500,000
G3	50,000	Course Certificate/Experience	Not exceeding 1 million
G4	150,000	1 Group B	Not exceeding 3 million
G5	250,000	1 Group A or Group B (<i>min 5 yrs experience</i>)	Not exceeding 5 million
G6	500,000	1 Group A and 1 Group B (<i>one of whom must have 3 yrs experience</i>)	Not exceeding 10 million
G7	750,000	1 Group A and 1 Group B (<i>both min 5 yrs experience</i>) or 2 Group A (<i>one of whom must have 5 yrs experience</i>)	No limit

1 for Private Limited Company and Public Company

2 for Sole Proprietorship based on bank accounts

3 Group A = Degree Holder in construction related fields; Group B = Diploma holder in construction related fields or other degree holder with experience in construction works

Source: Construction Industry Development Board

Figure 3 CIDB Registration Criteria and Conditions

Class	Paid-Up Capital (RM)	Tender Capacity (RM)
A	600,001	Exceeding 10,000,000
B	400,001	5,000,001 to 10,000,000
*BX	200,001	5,000,001 to 10,000,000
C	100,001	2,000,001 to 5,000,000
D	35,001	500,001 to 2,000,000
E	17,501	200,001 to 500,000
*EX	7,501	200,001 to 500,000
F	5,001	Up to 200,000

Note:

**Class BX and EX are no longer available to new applicants. However, currently there are still companies holding valid Class BX and EX.*

Source: General Guide to Contractor Registration for General Works, Contractor Service Centre, Ministry of Entrepreneur Development

Figure 4 PKK Registration Criteria and Conditions

Skills and Experience

- At its most basic, a road construction operator need not be technically skilled. All functions may be outsourced. The fundamental skill required of a road construction operator is the ability to exercise business prudence to ensure profitability.

16. INDEPENDENT MARKET RESEARCH LETTER (*Continued*)**VITAL FACTOR CONSULTING**

Creating Winning Business Solutions

Track Record

- As the Government continues to emphasise on the quality and safety of the nation's existing and growing road network system, the track record and quality of services will be significant factors when tendering for new contracts. Companies with reputable and reliable track records will have greater advantage within the industry.

6. Supply and Supply Dependencies

- The main raw materials used in the Road Construction, Rehabilitation and Maintenance include Aggregates (crushed rock), Cement and Concrete Products, Iron and Steel Products, and Bitumen.
- In 2001, there were 304 active quarries involved in the production of Aggregates used as road metal and for construction purposes. Most of the quarries are located in Perak and Sabah (*Source: Malaysian Minerals Yearbook 2001, Minerals and Geoscience Department Malaysia, Ministry of Primary Industries*). The total local production of Aggregates in 2001 amounted to 67 million tonnes whilst imported Aggregates amounted to approximately 590,900 tonnes (*Note: 2001 figure for Aggregates import is preliminary only*) (*Source: Malaysian Minerals Yearbook 2001, Minerals and Geoscience Department Malaysia, Ministry of Primary Industries*).
- To date, 107 out of a total of 198 companies that were given manufacturing licences between 1990 and 2000 to manufacture Cement and Concrete Products are in operation (*Source: Concrete Products, Industry Brief February 2001, Malaysian Industrial Development Authority*).
- Generally, domestic demand of Concrete Products is met by domestic production (*Source: Concrete Products, Industry Brief February 2001, Malaysian Industrial Development Authority*). Production of Ready Mixed Concrete increased in 2002 from 6.5 million cubic metres in 1998 to 9.4 million cubic metres (*Source: Monthly Manufacturing Statistics, December 2002, Department of Statistics*).
- Currently there are 12 companies in the production of ordinary Portland Cement. Output increased by 11.7%, from 11.21 million tonnes in 1999 to 12.52 million tonnes in 2000 (*Note: 2000 figures were annualised from January to November 2000*) (*Source: Ordinary Portland Cement, Industry Brief February 2001, Malaysian Industrial Development Authority*).
- There are approximately 317 establishments operating in the Iron and Steel Industry in Malaysia. Production within the industry is still dominated by long products, especially bars and wire-rods. There are several big mills producing bars and wire rods and a large number of small, independent millers who perform secondary re-rolling operations (*Source: Brief on the Iron and Steel Industry, Industry Brief February 2001, Malaysian Industrial Development Authority*). Production volume grew by 18.5% from 2.7 million tonnes in 2001 to 3.2 million tonnes in 2002 (*Source: Monthly Manufacturing Statistics, December 2002, Department of Statistics*).
- There are two local producers of bitumen (*Source: Department of Statistics*).

16. INDEPENDENT MARKET RESEARCH LETTER (*Continued*)**VITAL FACTOR CONSULTING**

Creating Winning Business Solutions

7. Demand and Demand Dependencies

- The Road Construction, Rehabilitation and Maintenance Industry play a major role in contributing to the economic and social development of the country. Hence, the Government continues to provide full support to the growth of the industry through increasing budget allocation for road development programmes.
- In the Seventh Malaysia Plan 1996-2000, road development was guided by the need to expand capacity and upgrade existing roads. During the period, allocation for road development was the highest at RM10.8 billion since 1981 (*Source: Malaysian Roads General Information 1999, Roads Branch, Public Works Department*). Based on latest statistics, actual expenditure for road development amounted to RM7.0 billion between 1996 and 2000 (*Source: Roads Branch, Public Works Department Malaysia*).
- In 2002, actual expenditure for road development amounted to RM1.7 billion, an increase of 13.3% over the previous year (*Source: Roads Branch, Public Works Department Malaysia*).
- In the Eighth Malaysia Plan 2001-2005, road development programme will be continued with emphasis on quality and safety. Other impetus for further road development include:
 - introduction of privatisation policy on highway development;
 - alleviation of traffic congestion in ports and growth centres;
 - improvement on inter-urban linkages and provision of better transport facilities;
 - diversification of the economic structure on the less developed states as part of regional development strategies.
- Under the Eighth Malaysia Plan, RM14.0 billion was allocated for road development, of which 63.6% is mainly for the improvement and upgrading of existing roads, and the remaining 36.4% is for the development of new roads (*Source: Transport and Infrastructure, Eighth Malaysia Plan 2001-2005, New Straits Times Newspaper dated 24 April 2001*). The larger allocation for upgrading of existing roads is in line with efforts to improve safety, driving comfort and reduce travel time, including the provision of motorcycle lanes in identified dangerous stretches (*Source: Eighth Malaysia Plan 2001-2005, Economic Planning Unit, Prime Minister's Department*).
- The increasing emphasis on road development as part of the total Transport Sector reflects the Government's efforts in supporting the infrastructure development in the country (*Source: Eighth Malaysia Plan 2001-2005, Economic Planning Unit, Prime Minister's Department*).

8. Competitive Nature and Intensity of the Industry

- As with most free enterprise environments, competition amongst Road Construction, Rehabilitation and Maintenance companies is based on a number of factors, including pricing, quality of services, track record and reliability.

16. INDEPENDENT MARKET RESEARCH LETTER (Continued)

**VITAL FACTOR CONSULTING**

Creating Winning Business Solutions

- Competition among Road Construction, Rehabilitation and Maintenance companies is **intense** based on the following observations:
 - As at 31st March 2003, there were 38,944 companies registered with the CIDB under the category of Civil Engineering Construction. Based on their track records, financial resources and personnel resources, these companies are classified by the CIDB into seven categories, ranging from G1 to G7. The grades indicate the size of each company's tendering capacity. There were 2,598 operators specialising in Road and Pavement Construction as at 6th June 2001.
 - Despite the large number of operators in the market, intensity of competition varies at different levels. The following is the segmentation by Grade in terms of tender capacity:

CIDB Grade	Number of Companies in Civil Engineering Construction*	Number of Companies in Road and Pavement Construction#
G1	24,043	1,160
G2	3,330	171
G3	5,712	414
G4	1,152	102
G5	1,854	200
G6	567	78
G7	2,286	473
TOTAL	38,944	2,598

Note:

Effective from 7th June 2001, CIDB no longer compiles data on the number of companies in Road and Pavement Construction.

(*Source: Construction Industry Development Board as at 31st March 2003)

(#Source: Construction Industry Development Board as at 6th June 2001)

Figure 5 Number of Operators Registered with CIDB

- The intensity of competition based on the total number of 38,944 companies in Civil Engineering Construction registered with CIDB is **very high** whilst competition amongst companies in Road and Pavement Construction is still **high** with a total of 2,598 road and pavement specialists. The competitive intensity within the Grade G7 category in which the Protasco Group operates, although slightly lower, is still **high** with 473 road and pavement specialists.

16. INDEPENDENT MARKET RESEARCH LETTER *(Continued)***VITAL FACTOR CONSULTING**

Creating Winning Business Solutions

- As at 31st May 2002, there were 27,817 companies in Civil Engineering Construction registered with Pusat Khidmat Kontraktor (PKK). The number of companies registered in each grade of the Civil Engineering Construction category are as follows:

PKK Grade	Number of Companies in Civil Engineering Construction
A	1,284
B	833
*BX	1,199
C	658
D	3,865
E	659
*EX	299
F	19,020
Total	27,817

(Source: Pusat Khidmat Kontraktor)

*Class BX and EX are no longer available to new applicants. However, currently there are still companies holding valid Class BX and EX.

Figure 6 Number of Operators Registered with PKK

- The intensity of competition based on the total number of 27,817 companies in Civil Engineering Construction registered with PKK is **very high**.
- The mobility of construction companies means that the industry is subjected to the full competitive forces from throughout Malaysia. However, usually, only larger companies have the economies of scale to undertake nationwide jobs.

9. Key Players in the Industry

- Some of the key players within the Road Construction, Rehabilitation and Maintenance Industry are as follows:
 - Bina Puri Holdings Berhad
 - IJM Corporation Berhad
 - Projek Penyelenggaraan Lebuhraya Berhad (PROPEL)
 - Setegap Berhad
 - Gamuda Berhad
 - PLUS Expressways Berhad
 - Road Builder (M) Holdings Berhad
 - PATI Sdn Bhd
 - Bumi Hiway (M) Sdn Bhd
 - Isyoda Corporation Bhd

(Source: Primary Market Research undertaken by Vital Factor Consulting Sdn Bhd)

10. Industry Outlook and Growth Forecast

- The outlook for the Road Construction, Rehabilitation and Maintenance Industry is highly dependent on the Government.

16. INDEPENDENT MARKET RESEARCH LETTER (*Continued*)**VITAL FACTOR CONSULTING**

Creating Winning Business Solutions

- As such, the outlook of the industry is encapsulated within the Eighth Malaysia Plan based on allocation of government funds and investments by the private sector as follows:
 - RM5.1 billion will be allocated for the development of new roads;
 - RM8.9 billion will be allocated for the improvement and upgrading of existing roads;
 - RM3.5 billion will be invested on roads by the private sector;
 (Source: *Eighth Malaysia Plan 2001–2005, Economic Planning Unit, Prime Minister's Department*).
- Growth within the Eighth Malaysia Plan will amount to 2.6% per annum based on the difference between the allocation of RM14.003 billion for the Eighth Malaysia Plan and the RM12.270 billion being the amount spent during the Seventh Malaysia Plan by the Government. (Source: *Eighth Malaysia Plan 2001–2005, Economic Planning Unit, Prime Minister's Department*).

Supporting Factors for Positive Growth

The following factors and observations in local Road Construction, Rehabilitation and Maintenance activities provide further support for the growth forecast:

- Construction and upgrading of roads and bridges amounted to RM2.8 billion, representing approximately 70% of total transport expenditure in 2001. This was followed by expenditure on railways, ports and airports, which amounted to RM1.2 billion, accounting for 30% of total transport expenditure (Source: *Economic Report 2001/2002, Ministry of Finance*);
- In 2000, the value of gross output of Civil Engineering Construction work was RM14.5 billion. The value of this sector grew at an average annual rate of 6.4% between 1994 and 2000 (Source: *Census Survey of Construction Industries 1995 and 2001, Department of Statistics*).

Performance of the Road Construction, Rehabilitation and Maintenance Industry

- In 1998, the value of Construction and Maintenance of Roads, Streets and Viaducts was RM3.6 billion. The average annual growth was 10.7% between 1994 and 1998 (Source: *Census of Construction Industries 1999, Department of Statistics*);
- In 2000, the value of Construction and Maintenance of Roads, Bridges, Tunnels, Viaducts Highways, Elevated Highways, Railway including Railway Tunnels amounted to RM5.7 billion, (Source: *Census of Construction Industries 2001, Department of Statistics*), representing average annual growth rate of 25.8% between 1998 and 2000.
- The value of Construction and Maintenance of Land Improvement, Levelling and Other Earth Works amounted to RM1.7 billion in 1998. Between 1994 and 1998, the sector grew by an average annual rate of 1.5% (Source: *Census of Construction Industries 1999, Department of Statistics*);
- In 2002, Road Maintenance grew by 9.1% amounting to 71,817.8 kilometres. From 1998 to 2002, Road Maintenance experienced a steady growth with an average annual rate of 2.8% (Source: *Road Maintenance, Roads Branch, Public Works Department Malaysia*);

16. INDEPENDENT MARKET RESEARCH LETTER (*Continued*)**VITAL FACTOR CONSULTING**

Creating Winning Business Solutions

- The Maintenance of Federal Roads, in terms of distance, grew at an average annual rate of 1.3% between 1998 and 2002. In 2002, the Maintenance of Federal Roads grew to 15,656.8 kilometres, an increase of 4.3% over the previous year (*Source: Road Maintenance, Roads Branch, Public Works Department Malaysia*);
- The Maintenance of State Roads, in terms of distance, increased to 56,161.1 kilometres in 2002, which represented a lift of 10.5% from previous year. The Maintenance of State Roads, in length, grew at an average annual rate of 3.2% from 1998 to 2002 (*Source: Road Maintenance, Roads Branch, Public Works Department Malaysia*).

Road Development Indicators

- From 1995 to 2000, the Road Density increased from 0.19 to 0.20, indicating a wider road coverage and greater accessibility. It is forecasted that the Road Density would increase to 0.21 kilometres of road per square kilometre by 2005;
- Road Development Index, which measures the level of road development, taking into account both area and population size of the country, also improved marginally from 0.74 in 1995 to 0.75 in 2000;
- Between 1995 and 2000, the Road Development Index grew marginally at an average annual rate of 0.3%. Marginal improvement is forecasted at around 0.76 by 2005;
- The Road Service Level, in terms of total road length per 1,000 persons, grew by an average annual rate of 0.1% between 1995 and 2000. It is forecasted that the Road Service Level, in terms of total road length per 1,000 persons, will grow to 3.02 by 2005.

(*Source: Eighth Malaysia Plan 2001-2005, Economic Planning Unit, Prime Minister's Department*).

Road Network

- Between 1997 and 2002, there were a total of 13,541.1 kilometres of roads constructed in Malaysia. Total roads constructed did not include tolled roads, 'kampung' roads, farm roads and rural roads;
- The total road network increased from 64,980.6 kilometres in 1997 to 78,521.7 kilometres in 2002;
- Between 1997 and 2002, the average annual rate of total road network in Malaysia grew by 3.9%. In 2002, the total network of roads grew by 7.5% over the previous year.

(*Source: Road Construction, Roads Branch, Public Works Department Malaysia*)

Federal and State Roads Network

- In 2002, there was a total of 78,521.7 kilometres of road network, of which 21.7% were Federal Roads. Federal Roads, which totalled 17,024.7 kilometres, formed the backbone of the national road network. The remaining 61,497.0 kilometres were classified as State Roads;
- Between 1997 and 2002, the Federal Road network grew at an average annual rate of 1.6%;

16. INDEPENDENT MARKET RESEARCH LETTER *(Continued)***VITAL FACTOR CONSULTING**

Creating Winning Business Solutions

- The Federal Road network increased from 15,710.6 kilometres in 1997 to 17,024.7 kilometres in 2002;
- In 2002, the Federal Road network increased by 0.9%;
- Between 1997 and 2002, the State Road network grew at an average annual rate of 4.5% amounting to a total of 61,497.0 kilometres;
- The State Road network increased from 49,270.1 kilometres in 1997 to 61,497.0 kilometres in 2002;
- In 2002, the State Road network increased by 9.5%.

(Source: Road Construction, Roads Branch, Public Works Department Malaysia)

Paved Roads

- In 2001, 78.3% of a total of 73,017.57 kilometres of road network in Malaysia were paved roads, while the remaining 21.7% were unpaved roads;
- In 2001, the length of Federal Roads that was paved increased by 0.5% to 16,001.08 kilometres;
- Between 1997 and 2001, the length of Federal Roads that was paved grew at an average rate of 2.1% per annum;
- In 2001, there were a total of 14,801.34 kilometres of paved Federal Roads in Malaysia *(Note: paved Federal Roads here did not include private managed roads)*. Around 82.3% or 12,180.21 kilometres of these roads were in Peninsular Malaysia while the remaining 17.7% were in Sabah and Sarawak;
- In 2001, the length of State Roads that was paved increased by 14.8% to 41,135.32 kilometres;
- Between 1997 and 2001, Paved State Roads grew by an average annual rate of 4.9%;
- In 2001, there were a total of 41,135.32 kilometres of paved State Roads in Malaysia. Paved State Roads in Peninsular Malaysia accounted for a large portion amounting to 87.7% or 36,070.12 kilometres of total paved State Roads in Malaysia. The remaining 12.3% was in Sabah and Sarawak.

(Source: Road Construction, Roads Branch, Public Works Department Malaysia)

Highways Development

- In 2001, there were 1,241.95 kilometres of highways, including operational highways, highways under construction and highway concessions that had been signed but work has not commenced *(Source: Malaysian Highway Annual Report 2001 and Highway Network, Malaysian Highway Authority)*.

16. INDEPENDENT MARKET RESEARCH LETTER (*Continued*)**VITAL FACTOR CONSULTING**

Creating Winning Business Solutions

Allocation and Expenditure on Road Construction, Rehabilitation and Maintenance

The demand for Road Construction, Rehabilitation and Maintenance Works is dependent on a number of external and internal factors including the following:

- Under the Eighth Malaysian Plan period, between 2001 and 2005, a total of RM14.0 billion had been allocated for road development, of which 63.6% was allocated for the improvement and upgrading of existing roads, and the remaining 36.4% was for the development of new roads (*Source: Transport and Infrastructure, Eighth Malaysia Plan 2001-2005*);
- The larger allocation for upgrading of existing roads is in line with the efforts to improve safety, driving comfort and reduce travel time, including the provision of motorcycle lanes in identified dangerous stretches (*Source: Eighth Malaysia Plan 2001-2005, Economic Planning Unit, Prime Minister's Department*);
- During the Eighth Malaysia Plan period, the RM14.0 billion road development allocation accounts for about 66% of the total allocation of RM21.2 billion for the Transport sector (*Source: Eighth Malaysia Plan 2001-2005, Economic Planning Unit, Prime Minister's Department*);
- In comparison with the period between 1996 and 2000, the allocation for road development for 2001 to 2005 is about 30% above the previous period. In addition, the allocation for 2001 to 2005 represents the highest point during the years spanning from 1981 to 2005 (*Source: Transport and Infrastructure, Eighth Malaysia Plan 2001-2005, and Malaysian Roads General Information 1999, Roads Branch, Public Works Department*);
- The average annual rate of allocation for Federal Roads Maintenance increased at 40.8% between 1998 and 2002 (*Source: Road Maintenance, Roads Branch, Public Works Department Malaysia*);
- Funds allocated for Federal Roads Maintenance amounted to RM547.5 million in 2002, a decrease of 2.4% over the previous year. Funds allocated for Federal Roads Maintenance in 2002 grew by 3.94 times from RM139.1 million in 1998 (*Source: Road Maintenance, Roads Branch, Public Works Department Malaysia*);
- Between 1998 and 2002, the average annual rate of the Expenditure on Federal Roads Maintenance grew by 42.6% (*Source: Road Maintenance, Roads Branch, Public Works Department Malaysia*);
- In 2002, the expenditure on Federal Roads Maintenance increased significantly by 65.9% to reach RM545.8 million, exceeding pre-recession expenditure levels (*Source: Road Maintenance, Roads Branch, Public Works Department Malaysia*);
- In 1998, Private Expenditure on New Construction and Major Renovation of Roads, Streets and Viaducts totalled RM1.7 billion. This exceeded the expenditure levels recorded in 1994 and 1995. Between 1994 and 1998, the average annual growth rate was 11.5% (*Source: Census of Construction Industries 1995, 1996, 1997 and 1999, Department of Statistics*);
- In 2000, Private Expenditure on New Construction and Major Renovation of Roads, Bridges, Tunnels, Viaducts Highways, Elevated Highway, Railways including Railway Tunnels amounted to RM2.5 billion (*Source: Census of Construction Industries 2001, Department of Statistics*) representing an average annual growth rate of 21.3% between 1998 and 2000;

16. INDEPENDENT MARKET RESEARCH LETTER (Continued)


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- In 1998, Private Expenditure on Repairs and Maintenance of Roads, Streets and Viaducts amounted to RM41 million, which was still below the high expenditure level incurred in 1995. From 1994 to 1998, the average annual rate declined by 16.4% (Source: *Census of Construction Industries 1995, 1996, 1997 and 1999, Department of Statistics*);
- In 2000, Private Expenditure on Repairs and Maintenance of Roads, Bridges, Tunnels, Viaducts Highways, Elevated Highway, Railways including Railway Tunnels was RM58.5 million (Source: *Census of Construction Industries 2001, Department of Statistics*) representing an average annual growth rate of 19.5% between 1998 and 2000;
- In 1998, Private Expenditure on New Construction and Major Renovation of Land Improvement, Levelling and Other Earth Works amounted to RM1.1 billion. Between 1994 and 1998, the average annual growth rate declined by 4.1% (Sources: *Census of Construction Industries 1995, 1996, 1997 and 1999, Department of Statistics*);
- In 1998, Private Expenditure on Repairs and Maintenance of Land Improvement, Levelling and Other Earth Works moderated at RM19 million. The private expenditure declined at an average annual rate of 2.5% between 1994 and 1998 (Source: *Census of Construction Industries 1995, 1996, 1997 and 1999, Department of Statistics*).

11. Areas of Growth and Opportunities
Innovative Products

- Bitumen used for road construction and maintenance activities becomes harder and more elastic under the influence of hot sunshine and ultraviolet radiation. In respect to resistance to permanent deformation this may not cause any problems. However, in respect to surface cracking, bitumen in hot and arid climates may have severe impact on the quality of pavement in the long run. Therefore, bitumen in hot and arid climates needs to be very resistant to ageing.
- The properties of bitumen can be strengthened by improving the structure or composition of the bitumen (upgrading) or by adding additives to the bitumen (polymer modification) (Source: *Innovative Road Rehabilitation and Recycling Technologies dated 24 – 26 October 2000, Ministry of Public Works and Housing, Jordan*).
- As such, there are significant opportunities in developing higher value-added and improved products for road construction, maintenance and rehabilitation.

Innovative Processes and Technologies

- The processes and technologies in road construction, maintenance and rehabilitation are relatively established. However, innovative processes and use of technologies can provide significant advantages for operators to differentiate themselves as well as address new markets.

16. INDEPENDENT MARKET RESEARCH LETTER (*Continued*)**VITAL FACTOR CONSULTING**

Creating Winning Business Solutions

- One area of significant competitive differentiation and growth is the implementation of new processes and technologies in rehabilitation of roads through recycling. Through these new processes and use of technologies, old roads are excavated, treated, recycled and repaved as new roads. This process of recycling provides significant cost savings in purchases of new raw materials (aggregates) and disposal of old materials, as the old materials are recycled.
- These new processes and use of technologies can be applied in the Malaysian environment as well as some overseas countries where such processes and use of technologies have not taken place yet.

Overseas Markets

- There are opportunities for Malaysian operators to expand road construction, rehabilitation and maintenance services overseas.
- Malaysia has been successful in overseas markets, especially in less developed countries including, among others, Myanmar, Vietnam and India.
- Operators that can serve various markets will have increased areas of opportunities for growth as well as to diversify business risk.

12. Threats and Risks Analysis

Dependency on Government Contracts and Plans

- The Road Construction, Rehabilitation and Maintenance Industry is highly dependent on contracts awarded by the Government. As a result, any plans and policies implemented by the Government will have a direct impact on the business of Road Construction, Rehabilitation and Maintenance operators.
- In mitigation, there are various financial resources that the Government utilises to fund road development projects. These include public funds, increased revenues through higher taxes, and privatisation exercises through equity contributions, rights issue, private debt securities, loans and Infrastructure Project Companies (IPC) listings.
- As such, in the event of the Government is faced with inadequate funds generated from public accounts, there are alternate sources of funding for road development projects. Hence the development of road infrastructure will continue to be sustained through various financial resources.

Economic Slowdown

- An economic slowdown, for example in 1997/1998 and 2002, may reduce government and private expenditure in road construction and maintenance.
- In mitigation, the Government's continued prompt policy flexibility in implementing pro-growth measures to sustain the country's growth momentum, by raising domestic demand to compensate for slower external growth, will help Malaysian manufacturers and service operators including operators in the Road Construction, Rehabilitation and Maintenance Industry, to be in a stronger position to counter the effects of the slowdown in the local and global economy.

16. INDEPENDENT MARKET RESEARCH LETTER (*Continued*)**VITAL FACTOR CONSULTING**

Creating Winning Business Solutions

- In fact, in the Eighth Malaysia Plan, there was an increase of investment in infrastructure projects, such as road and port projects, by the Government compared with the Seventh Malaysia Plan. This augurs well for operators within the Road Construction, Rehabilitation and Maintenance Industry.
- One of the main mitigations is that the Government, in the Eighth Malaysia Plan, has allocated RM14 billion of Government funds and targeted RM3.5 billion for private investments for the development and improvement of roads. As this is a Government allocation and part of the Eighth Malaysia Plan, it is highly independent on existing economic performance, as road development and improvement are essential to the continuing development of the nation.

Private Investment Slowdown

- During the Seventh Malaysian Plan period, the private sector invested a total of RM7.9 billion for the development of privatised highways compared with RM15.2 billion during the Sixth Malaysia Plan period. For the Eighth Malaysia Plan period, a total of RM3.5 billion has been allocated for roads investment by the private sector (*Source: Eighth Malaysia Plan 2001–2005, Economic Planning Unit, Prime Minister's Department*).
- This fall in investment within the private sector in road development has a direct impact on the Road Construction, Rehabilitation and Maintenance business.
- In mitigation, road expenditure of RM17.5 billion, representing 25.6%, was the second largest investment of total private sector investment between 1991 and 2000.
- The slowdown in private investment in the Road sub-sector was mainly due to the financial crisis. However, the slowdown is offset by increased Government allocation of RM14.0 billion for road construction and improvement projects under the Eighth Malaysia Plan in comparison with an allocation of RM12.4 billion in the Seventh Malaysia Plan (*Source: Eighth Malaysia Plan 2001–2005, Economic Planning Unit, Prime Minister's Department*).
- Continuing Government expenditure as well as significant investments made by private sector in road development, will continue to provide business opportunities for operators within the Road Construction, Rehabilitation and Maintenance Industry.

13. **Market Size****Road Construction**

- In 2002, the total length of Roads constructed in Malaysia amounted to **5,504 kilometres**.

Road Maintenance

- In 2002, the total network of Roads under maintenance in Malaysia amounted to **71,818 kilometres**.

16. INDEPENDENT MARKET RESEARCH LETTER (*Continued*)



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14. Market Share

Road Maintenance

- In 2002, based on a total of 5,550 kilometres of roads maintained by the Protasco Group, its market share was approximately 8% of the Road Maintenance Industry in Malaysia.

Vital Factor Consulting Sdn Bhd has prepared this report in an independent and objective manner and has taken all reasonable consideration and care to ensure the accuracy and completeness of the report. It is our opinion that the report represents a true and fair assessment of the industry within the limitations of, among others, secondary statistics and information, and primary market research. Our assessment is for the overall industry and may not necessarily reflect the individual performance of any company. We do not take any responsibilities for the decisions or actions of readers of this document. This report should not be taken as a recommendation to buy or not to buy the shares of any company or companies.

Yours sincerely

A handwritten signature in black ink, appearing to be 'Wooi Tan', written over a horizontal line.

Wooi Tan
Managing Director
Vital Factor Consulting Sdn Bhd