THE UNITED REPUBLIC OF TANZANIA

PRIME MINISTER'S OFFICE
TANZANIA INVESTMENT CENTRE

FILE BEGINS | ENDS | PART

FILE TITLE

CONFIDENTIAL

FILE NUMBER
TICC PP10

042179

INDEX HEADINGS

FILE NUMBER PART
TICC PP10 042179

Officer or Section	For Action F/M	Initials	Date	Action taken vide F/M	Officer or Section	For Action F/M	Initials	Date	Action taken vide F/M	Officer or Section	For Action F/M	Initials	Date	Action taken vide F/M
DIF														
Chair														
DAF														
DIF														
Chair														
AgED														

EBONY & Co LTD

1.0

Ag. EXD

The approved project has fulfilled the investment requirements, which are: -

(a) Minimum finance investment threshold has been exceeded, the project expects to invest ....US$ 2.095 M.....

(b) Legal entity has been incorporated under certificate

No. 28806..... of 11/07/95.....

Based on the above, the letter of approval is hereby submitted for signature in order for the project to comply with the requirements of Section 17 of Tanzania Investment Act, 1997.

Submitted for signature.

N. A. Senzia
DIF
5th March, 2012

2.0

EXD

In response to the TIC letter of registration dated.....05/08/2012.....

the project has submitted the required documents namely: -

(a) Company Board Resolution.

(b) Reference letter/Financing from.....Barclays Bank.....

(c) .....Title Deed.....

With the above submission EXD is requested to sign Certificate of Incentives No. .....04217 9..... herein attached.

Ag. DIF
08/03/2012

EXTRACT FROM MEETING OF THE BOARD OF DIRECTORS AND SHAREHOLDERS OF

EBONY AND COMPANY LIMITED
P. O. Box 4051

DAR ES SALAAM, TANZANIA

AT A DULY CONVENED AND CONSTITUTED MEETING OF THE BOARD OF **EBONY AND COMPANY LIMITED** HELD AT REGISTERED OFFICES OF THE COMPANY IN DAR ES SALAAM, TANZANIA. ON 27 of JANUARY 2012, the following resolutions were passed:

1. THAT US$ ~~211,100~~ 2,095,000 BE ALLOCATED TO FINANCE ESTABLISHMENT OF MANFACTURING OF CONSTRUCTION MATERIALS IN TANZANIA

2. THAT Mr. FAUZIA JAMAL WILL BE MANAGING DIRECTOR TO OVERSEE IMPLEMENTATION OF THE PROJECT INCLUDING IDENTIFYING SUITABLE EQUIPMENTS AND MACHINERY

3. THAT THE COMPANY BE REGISTERED WITH TANZANIA INVESTMENT CENTRE SO AS TO ENJOY FULLY INVESTMENT INVENTIVES, BENEFITS AND PROTECTION AS STATUTORY PROVIDED FOR UNDER TANZANIA INVESTMENT ACT, 1997.

CERIFIED TRUE EXTRACT
(By order of the Board)

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CHAIRMAN SECRETARY

THE COMPANIES ORDINANCE

(CAP. 212)

COMPANY LIMITED BY SHARES

Memorandum

AND

Articles of Association

OF

EBONY AND COMPANY LIMITED

Incorporated this day of 19

DRAWN BY:

FAUZIA JAMAL
(PROMOTER)
P.O. BOX 4051,
DAR ES SALAAM

Form PA 1 Serial No. 7733 TIC N 09843

TANZANIA INVESTMENT CENTRE

REGISTRATION FORM

FOR

CERTIFICATE OF INCENTIVES

(Tanzania Investment Act 1997, Section 17 and 18, and the Investment Regulations: Regulation 42, Government Notice No. 318A of 2002)

Tanzania Investment Centre
9A & B Shaaban Robert Street
P. O. Box 938
DAR ES SALAAM
Tel. 022 2116328
Fax. 022 2118253
e-mail: information@tic.co.tz
Website: www.tic.co.tz

(Please fill the form in duplicate)

UNITED REPUBLIC OF TANZANIA

THE TANZANIA INVESTMENT ACT
(No. 26 of 1997)

APPLICATION FOR REGISTRATION
(Made under Regulation 42)

To: The Executive Director
Tanzania Investment Centre
P. O. Box 938
DAR ES SALAAM
Tanzania

1. I/We .....

(diretor/directors/agent of .....

(name of business enterprise) apply for registration of .....

under Section 17 of the Act and Part IV of the Investment Regulations, 2002.

2. The registered office of the company will be situated at .....

.....

Copies of the following documents are attached to this application:

(i) The Memorandum and Articles of Association/or partnership agreement

(ii) Certificate of Incorporation/Registration

(iii) A copy of the Project Profile or Feasibility Study showing the implementation period, programme of implementation and operative date

(iv) Evidence of financing and evidence of land ownership for the project

3. The Head Office of the Company will be situated at .....

4. The Principal Officers of the Company are .....

.....

.....

5. Auditors of the Company are .....

.....

6. The authorized share capital of the Company is Tshs./US$ .....

.....

.....

7. The intended capital investment of the Company in terms of Section 20(2) of the Act

is Tshs./US$ .....

8. The month and day of the financial year end is .....

Note: ***failure to provide all the required information will result in the return of the application by the Centre.***

I/We enclose a cheque/cash made payable to the **Tanzania Investment Centre** for Tshs./US$

..... Being the Registration Fees. ***In the event this application is unsuccessful we understand that this fee will not be refunded.***

I, ... of Post Office Number .....

..... do solemnly and sincerely declare that I am a director/duly

authorized agent of .....

AND that all the requirements of the Tanzania Investment Act, 1997 in respect of matters precedent to the registration of the business enterprise under the Act and incidental thereto have been complied with, **AND** I make this solemn declaration conscientiously believing the same to be true.

Declared at Dar es Salaam }
.....
} **Applicant**
The .....day of ..... 20.....}

Before me:

.....
Commissioner for Oaths

Attach only where applicable, otherwise indicate "N/A"

APPLICATION SUMMARY

Company Name: .....

Certificate of Incorporation Number: ..... Status: .....

Certificate of Incorporation Date: ....

Post Box: .....

Town: .....

Sector: ..... **Sub-Sector:** .....

Investment Financing Plan in Million US$/Tshs.

Foreign Equity	Local Equity	Foreign Loan	Local Loan
.....	.....	.....	.....

Project Objectives:.....

.....

.....

Capacity: .....

Employment: Foreign: ..... Local: .... Total: .....

Implementation Period: .....

Project Location

Site/Plot/Block No.: .....

Street: ..... District: ..... Region: .....
(Attach sketch map showing project location)

Shareholders	**Nationality**	**%**
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....

Investment Breakdown **US$/Tshs.M**

Land/Building .....

Plant .....

Vehicles .....

Furniture & Fittings .....

Pre-expenses .....

Others .....

Working Capital .....

TOTAL .....

Contact Details:

Name: ..... Title: .....

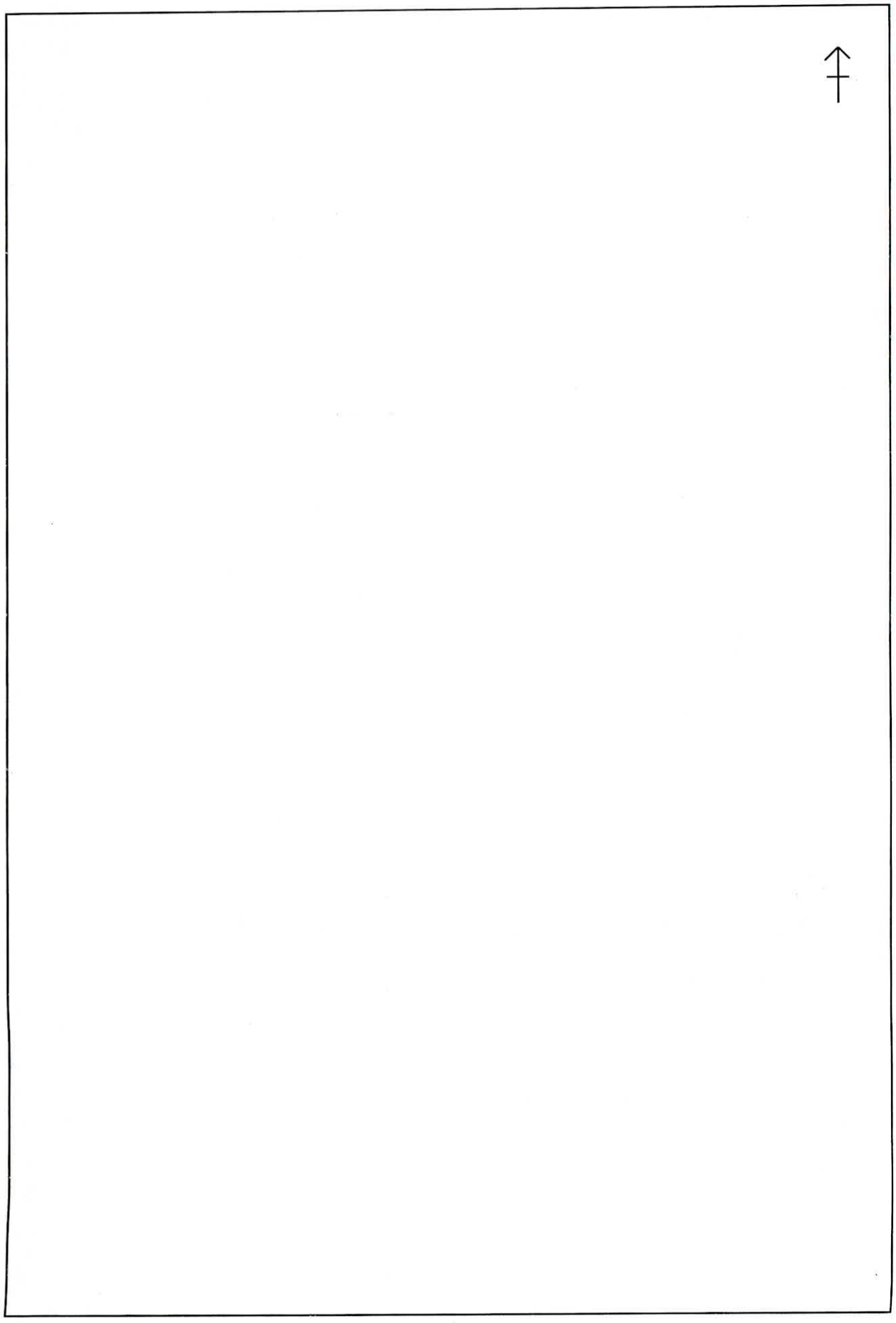
Telephone:..... Fax: .....

Email: .....

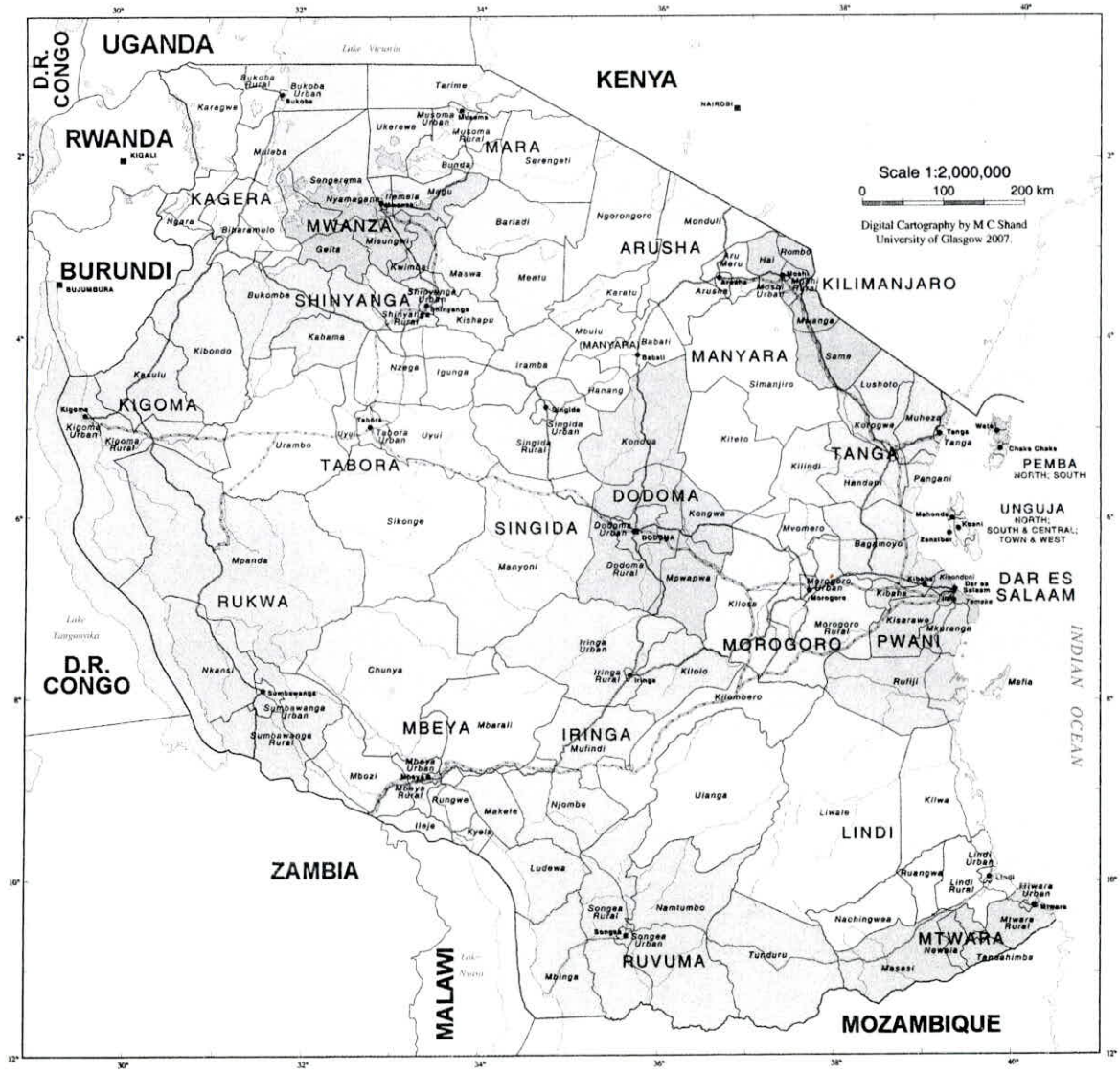
Payments to be made payable to:

TANZANIA INVESTMENT CENTRE
STANDARD CHARTERED BANK TANZANIA LTD.
SWIFT ADDRESS: **SCBLTZTX**
ACCOUNT NO.: **8702006002000**

SKETCH MAP SHOWING PROJECT LOCATION




TUNISIA
LIBYA
EGYPT
MAURITANIA
MALI
NIGER
CHAD
ERITREA
DJIBOUTI
ETHIOPIA
SOMALIA
ZAIRE
KENYA
UGANDA
Indian Ocean
South Atlantic Ocean
ANGOLA
ZAMBIA
MALAWI
MOZAMBIQUE
ZIMBABWE
NAMIBIA
BOTSWANA
SOUTH AFRICA
SWAZILAND
LESOTHO
SOUTHAFRICA
Indian Ocean


D.R. CONGO
UGANDA
KENYA
NAIROBI
RWANDA
KIGALI
BURUNDI
BUJUMBURA
Lake Victoria
Scale 1:2,000,000
0 100 200 km
Digital Cartography by M C Shand
University of Glasgow 2007.
MARA
KAGERA
MWANZA
SHINYANGA
ARUSHA
KILIMANJARO
MANYARA
KIGOMA
TABORA
SINGIDA
DODOMA
TANGA
PEMBA
NORTH; SOUTH
UNGUJA
NORTH; SOUTH & CENTRAL; TOWN & WEST
DAR ES SALAAM
PWANI
MOROGORO
RUKWA
IRINGA
MBEYA
LINDI
MTWARA
RUVUMA
ZAMBIA
MALAWI
MOZAMBIQUE
INDIAN OCEAN
Lake Tanganyika
Lake Nyasa

C. 1

TANZANIA

Certificate of Incorporation

No. 28806

I HEREBY CERTIFY THAT

EBONY AND COMPANY

.....Limited

is this day incorporated under the Companies Ordinance (Cap. 212) and that the Company is Limited.

Given under my hand at Dar es Salaam this 7th day of NOVEMBER

One thousand nine hundred and NINETY FIVE

Senior Asst: .....

Registrar of Companies

G P Dsm 001126/4-95/9m

TANZANIA

Certificate of Incorporation

No.

I HEREBY CERTIFY that **EBONY AND COMPANY LIMITED** is this day incorporated under the Companies Ordinance, (Cap. 212). and that the Company is Limited.

Given under my hand at Dar es Salaam, this day of One thousand nine hundred and

SEAL

Registrar of Companies

THE COMPANIES ORDINANCE (CAP.212)

COMPANY LIMITED BY SHARES

MEMORANDUM OF ASSOCIATION

OF

EBONY AND COMPANY LIMITED

1. The name of the Company is EBONY AND COMPANY LIMITED.

2. The Registered office of the Company shall be situated in Mainland Tanzania.

3. The objects for which the Company is established are:-

(a) To acquire and take over the business carried on in Dar es Salaam under the name and style of EBONY AND COMPANY together with its assets, goodwill and liabilities.

(b) To engage in and or otherwise carry on the business of exporting various types of goods, export of carvings, ebony carving, artcrfts, ornaments, batiks, sea shells agricultural products, marine products, and any other thing which the company may conviniently export.

(c) To engage or otherwise to carry on the business of importing spare parts, textiles, raw materails for industrial processes, importers and suppliers of chemicals, industrial chemicals,pharmaceuticals and any other things as the Company may deem fit to deal in.

(d) To carry on or otherwise to engage in the business as commission agents, manufacturers representatives, clearing and forwarding agents, bonded warehousemen, travel agents, operators of omnibuses and transporters and haulers of cargo of every description.

(e) To engage and or otherwise carry on the business of general business management consultants,to be consultants, and to be investors and financiers, to be consulting engineers and project management to engage and or otherwise provide Company secretarial services, general secretarial services, and to provide technical management services and generally enter into partnership and joint venture arrangements with local and foreign persons legal or natural.

f) To buy sell agricultural in-puts and machinery and to engage in types of professional, management consultancy assignments such as accountancy, auditing, project appraisal, agro-industrial, marketing services, subject to any law in existence or be enacted.

g) To carry on the business of clearing and forwarding agents, land and estate agents, air, road and shipping line agents, financial agents and agents for all classes of insurance.

h) To purchase or by any other means, acquire any right of occupancy, leasehold, freehold and/or other property or any interest whatsoever in any such property, and/or any rights, privileges, or casements over or in respect of any property for the purpose of any of the objects of the company and for such purpose, to erect and work all such mills, machinery and factories which may be deemed necessary.

i) To treat, cure, submit, to any process of manufacture and prepare for market (whether on account of the company or others) any produce or products and articles or things whatever, to buy, sell, warehouse, transport by land or water, and to deal in any such produce or products and in any other goods, produce, wares, merchandise, articles and things of any kind whatsoever.

j) To lease and work on royalty basis or other arrangement any ship, boat, trawler, catcher, carrier, factory and any other business.

k) To carry on business, and to act as merchants, wholesale and retail, traders, commission agents, or in any other capacity, in Tanzania or elsewhere and to import, export, buy, sell, barter, exchange, pledge, make advances upon or otherwise deal in any goods, produce, articles and merchandise.

l) To develop and turn to account any land acquired by or in which the company is interested and in particular by laying out and preparing the same for building purposes, constructing, altering, pulling down, decorating, maintaining, furnishing; fitting up and improving buildings and by letting on building lease or building agreement and by advancing money to and entering into contracts and arrangements of all kinds with builders, tenants and others.

m) To carry on any other business which may seem to the company capable of being conveniently carried on in connection with any of the above or calculated directly or indirectly to render profitable or enhance the value of the company's property or right for the time being.

n) To purchase or otherwise acquire all or any part of the business or property of any persons, association or company carrying on or (in the case of a company) formed to carry on any business which the company is authorised to carry on or possessed of property suitable to the purposes of the company and in consideration of the same to pay cash or issue any share, stock, and in connection with any such transaction to undertake any liabilities relating to the business or property acquired.

o) To enter into partnership or into any arrangement for sharing profits, union of interest, cooperation, joint adventure or reciprocal concessions with any person or company carrying on or engaged in, or about to carry on or engage in, any business or transaction which this company is authorised to carry on or engage in any business or transaction capable of being conducted so as directly or indirectly to benefit this company.

p) To purchase or otherwise acquire, sell, dispose of real and personal property of all kinds.

q) To sell or otherwise dispose of the whole or any part of the undertaking and assets of the company either together or in portions for such consideration as the company may think fit.

r) To improve, manage, cultivate, develop, exchange let on lease, or otherwise, mortgage, sell, dispose of, turn to account grants, rights and privileges in respect of or otherwise deal with all or any part of the property and rights of the company.

s) To promote any other company for the purpose of acquiring all or any of the property and undertaking and liabilities of this company, or of undertaking any business or operations which may appear likely to assist or benefit this company, or to enhance the value of any property or business of this company and to place or guarantee the placing of, underwrite, subscribe for or otherwise acquire all or any part of the shares or securities of such company as aforesaid.

u) Lend and advance money or give credit to such persons, and on such terms as may seem expedient, and in particular to customers and other having dealings with the company.

v) To borrow or raise money in such manner as the company shall think fit, and in particular by the issue of debentures and/or debenture stock, perpetual or otherwise and to secure the repayment of any money borrowed, raised, or owing by mortgage, charge and/or lien upon the whole or any part of the company's property or assets (whether present or future) including its uncalled capital and also by a similar mortgage charge and/or lien to secure and guarantee the performance by the company of any obligation or liability it may undertake.

w) To draw, make, accept, endorse, discount, execute and issue promissory notes, bills of exchange, bills of lading, warrants, debentures, and other negotiable or transferable instruments.

x) To distribute among the members of the company in kind any property of the company, and in particular any shares, debentures or securities of other companies belonging to this company, or of which this company may have the power of disposing.

y) To enter into any arrangements with any governments, or authorities, supreme, municipal, local or otherwise that my seem conducive to the company objects or any of them, and to obtain from any such government or authority any charters, decrees, rights, privileges and concessions the company may think desirable, and to carry out, exercise and comply with any such arrangements, charters, decrees, rights, privileges and concessions.

z) To act as managing agents and trustees for any person firm or company, and to undertake and perform sub-contracts and also that act in any of the businesses of the company through or by means of agents, brokers sub-contractors or others.

aa) Generally to do all such things as may appear to be incidental or conducive to the attainment of the above objects or any of them.

The objects set forth in any sub-clause of this clause shall not, except when the context expressly so requires, be in any wise limited or restricted by reference or inference from the terms of any other sub-clause or by the name of the company. None of such sub-clauses or the objects therein specified or the powers thereby conferred shall be deemed subsdiary or auxiliary marely to the objects mentioned in the first sub-clause of this clause, but the company shall have full power to exercise all or any of the powers conferred by any part of this clause in any part of the world and notwithstanding that the business,undertaking,property or acts proposed to be transacted, acquired, dealt with or performed do not fall within the objects of the first sub-clause of this clause.

The liability of the members is Limited.

The share capital of the company is shillings 500,000/= five hundred thousand only divided into five hundred (500) ordinary shares of shillings One Thousand (1000/=) each.

WE, the several persons, whose names and addresses are subscribed, are desirous of being formed into a company in pursuance of this Memorandum of Association and we respectively agree to take the number of shares in the capital of the company set opposite our respective names.

Names, Addresses and Descriptions of Subscribers	Numbers of Shares	Signature:
1. FAUZIA JAMAL P.O. BOX 4051, DAR ES SALAAM	3	Hamad
2. HASSAN JAMAL P.O. BOX 4051, DAR ES SALAAM	2	

Dated at Dar es Salaam this 23rd day of August 1993.

WITNESS to the above Signatures:

SIGNATURE: Mulaka

POSTAL ADDRESS: Box 2203
DSM

QUALIFICATION: ADVOCATE

THE COMPANIES ORDINANCE(CAP.212)

COMPANY LIMITED BY SHARES

ARTICLES OF ASSOCIATION

OF

EBONY AND COMPANY LIMITED

PRELIMINARY

1. The Regulations contained in Table A in the first Schedule of the Companies Ordinance (Cap.212) of the Laws of Tanganyika (hereinafter referred to as Table A) shall not apply to the company.

2. The Company is a Private Company and accordingly:-

   a) The right to transfer shares is restricted in the manner hereinafter prescribed.

   b) The number of members of the Company(exclusive of persons who are in the employment of two Company and of persons who having been formerly in the employment to be members of the company) is limited to fifty; PROVIDED THAT where two or more persons hold one or more shares in the Company jointly; they shall for the purpose of this articles be treated as single member.

   c) Any invitation to be public to subscribe for any shares or debentures of the company is prohibited.

   d) The Company shall not have power to issue warrants to bearer.

SHARE CAPITAL AND SHARES

3. The share capital of the company is Tanzania Shillings 500,000/= **five hundred thousand** , only divided into **five hundred** (500) ordinary shares of Shillings **One** Thousand(1,000/= each.

4. The share of the Company shall be under the control of the Board of Directors and shall be subject to the provisions of the ordinance and the Memorandum of Association.

5. The company shall be entitled to treat the persons whose names appear upon the Register in respect of any share or shares as the absolute owner thereof and shall not be under any obligation to recognize any trust or equity or equitable claim to or partial interest in such share or shares whether or not it shall have express or other notice thereof.

6. The business of the company shall be managed by the directors who may use powers vested to them by the General Meeting.

7. The directors may from time to time make calls upon the members in respect of any moneys unpaid on their shares provided that no call shall exceed one fourth of the nominal amount of the share, or be payable at less than one month from the last call; and each member shall (subject to receiving at least fourteen days notice notifying the time or times of payment) pay to the company at the time or times so specified the amount called on his shares. A call may be revoked or postponed as the directors may determine.

8. Joint holders of shares shall be jointly and severally liable to pay all calls in respect thereof.

9. If a sum called in respect of a share is not paid before or on the day appointed for payment thereof, the persons from whom the sum is due shall pay interest upon the sum at the rate of eight percent per annum from the day appointed for the payment thereof to the date of the actual payment, but the directors shall be at liberty to waive payment of that interest wholly or in part.

10. The provisions of these regulations as to the liability of joint holders and as to payment of interest shall apply in the case of non payment of any sum, which by the terms of issue of shares becomes payable at a fixed time, whether on account of the amount of the share, or by way of premium, as if the share had become payable by virtue of a call duly made and notified.

11. The directors may make arrangements on the issue of the shares for a difference between the holders in the amount of call to be paid and in the times of payment.

12. The directors may, they think fit, receive from any member willing to advance the same all or any part of the moneys uncalled and unpaid any shares held by him, and upon all or any of the moneys so advanced may (until the same would, but for advance become presently payable) pay interest at such rate(not exceeding, without the sanction of the company in general meeting, six percent) as may be agreed upon between the members paying the sum in advance and the directors.

TRANSFER AND TRANSMISSION OF SHARES

13. The instrument of transfer of any shares shall be executed by or on behalf of the transferor and transferee, and the transferor shall be deemed to remain a holder of the share until the name of the transferee is entered in the register of members in respect thereof.

Shares shall be transferred in the following for, or in any usual or common form which the directors shall approve:-

> "I, A.B. of..... in consideration of shs:.....paid to me by C.D. of..... (hereinafter called "the said transferee") do hereby transfer to the said transferee the share (or shares) numbered..... in the undertaking called .....LIMITED to hold unto the said transferee, subject to the several conditions on which I hold the same, and I, the said transferee, to hereby agree to take the said share (or shares) subject to the conditions aforesaid. As witness our hands the.....day of.....19....
>
> Witness to the Signature of,etc."

The directors may in their absolute discretion decline to register any transfer of shares to a person of whom they do not approve not being already a member of the company and the company as a lien. The directors may also suspend the registration of transfer during the fourteen days immediately preceeding the ordinary general meeting in each year. The directors may decline to recognise any instrument of transfer unless:-

a) A fee not exceeding two shillings is paid to the company in respect thereof; and

b) The instrument of transfer is accompanied by the certificate of the shares to which it relates,and such other evidence as the directors may reasonably require to show the right of the transferor to make the transfer.

14. If the directors refuse to register a transfer of any shares they shall within two months after the date on which the transfer was lodged with the company send to the transferee notice of the refusal.

15. The legal personal representatives of a deceased sole holder of a share shall be the only persons recognised by the company as having any title to the share. In the case of a share registered in the names of two or more holders, the survivors or survivor, or the legal personal representatives of the deceased a survivor, shall be the only persons recognised by the company as having any title to the share.

16. Any person becoming entitled to a share in consequence of the death or bankruptcy of a member shall, upon evidence being produced as may from time to time by properly required by the directors, have the right, either to be registered as a member in respect of the share or, instead of being registered himself, to make such transfer of the share as the deceased or bankrupt person could have made, but the directors shall, in either case, have the same right to decline or suspend registration as they would have had in the case of a transfer of the share by the deceased or bankrupt person before the death or bankruptcy.

17. A person becoming entitled to a share by reason of the death or bankruptcy of the holder shall be entitled to the same dividends and other advantanges.

GENERAL MEETINGS

18. A General Meeting shall be held once in every calender year as the Annual General Meeting. Such meeting shall be additional to any other meetings in the same year and shall be held at such time (not being more than fifteen (15) months after the holding of the last proceedings Annual General Meeting) and place as may be determined by the directors.

19. Twenty One (21) days notice at least (exclusive of the day on which the notice is served or deemed to be served and of the day for which it is given) in respect of all General Meetings shall be given to the members specifying the date, hour and place of the meeting and in case of special business, the nature of such business either by Advertisement or by noticesent by post or otherwise served as hereinafter provided, but, with the consent in writing of such percentage of the members as may from time to time be required by law for the purpose, or in the event of there being no requirement by law then of all members entitled to receive notice of meeting,a meeting may be convened in such manner as the directors may think expedient.

20. At any General Meeting a resolution put to the vote of members shall be decided on a show of hands unless a poll is demanded by any member present in person or by proxy or by attorney (before or on the declaration of the result of the show of hands). Unless a poll is so demanded, declaration by the chairman that a resolution has, on a show of hands, been carried, or carried unanimously or by a particular majority or lost and any entry to that effect in the book containing the minutes of the proceedings of the company shall be conclusive evidence of the fact without proof of the member or proportion of the votes recorded in favour of or against such resolution.

21. No meeting shall be valid unless a quorum of members is present at the time when the meeting proceeds to business two thirds of members present in person or by proxy or by attorney shall be a quorum for the purpose of this clause.

VOTES OF MEMBERS

22. On a show of hands every member present in person and every proxy for or attorney of an absent member (if such proxy or attorney is not himself a member and entitled to vote) shall be entitled to one vote. On a poll every member shall have one vote for every share for which he is a holder.

23. The instrument appointing a proxy and the power of attorney or other authority, if any, under which it is signed or a notarially certified copy of such power or authority shall be deposited at the registered office of the company not less than Twenty Four (24) hours before the time for holding the meeting or in the case of a poll, the time appointed for taking such poll and in default the instrument shall not be treated as valid.

24. Extra Ordinary meetings shall be held at any time as it may be arranged by the directors or required by at least thirty (30) shareholders.

25. A member will be allowed to vote only when he/she has paid up all shares called on him/her.

26. The Annual General Meeting shall discuss among other things:-

a) Accounts of the Company

b) Distribution of dividends and/or interest

c) Election of directors unless a fixed period is alloted to them.

d) Annual Report of Directors.

e) Fixing of income and expenditure for the current year.

27. The Chairman of the Board of Directors shall preside as Chairman of the General Meeting. In the absence of this Chairman the delegates may appoint another Chairman.

DIRECTORS

28. The number of directors shall not exceed eight(8) and shall not be less than two.

29. The first directors shall be:-

1. FAUZIA JAMAL

2. HASSAN JAMAL

30. The business of the company shall be managed by the directors who may use powers vested to them by the General Meeting.

31. The directors may appoint one of them to be the Managing Director who will be paid a monthly salary or commission as shall be fixed from time to time by the company in the General Meeting. Other directors may also be paid such remuneration as the company may determine in the General Meeting.

32. The qualification of a director shall be holding of at least one share in the company.

DISQUALIFICATION OF DIRECTORS

33. The Office of director shall "Ipso facto" be vacant:-

a) If he/she be found lunatic or becomes or unsound mind;

b) If he /she shall become bankrupt in this Territory or in any other territory which is declared to be a reciprocating territory under Section 147 of the bankruptcy ordinance; or

c) If he/she becomes prohibited from being a director by reason of any order made under Sections 213 or 269 of the ordinance; or

d) If he/she resigns his office by notice in writing to the company; or

e) If he/she is punished with imprisonment for a term exceeding six months without the option of a fine.

f) If he/she absents him/herself from meetings of the directors during a continous period of six months without special leave from other directors and they pass a resolution that he has by reason of such absent vacated office;

g) If he/she without the consent of the company in general meeting holds any other office of profit under the company except that of Managing Director or Manager.

BORROWING POWERS

34. The directors may raise or borrow for the purpose of the company's business such sum of money as they think fit and secure the repayment of or raise any such sum or sums as aforesaid by mortgage or charge upon the whole or any part of the property and assets of the company, present and future, including its uncalled capital or by the issue at such price as they may think fit, of bounds or debentures, either charged upon the whole or part of the property and assets of the company, present and future including its uncalled or unissued capital, or not so charged or in such other way as the directors may think expedient.

PRELIMINARY EXPENSES

35. In order to meet the preliminary expenses, the shareholders will have to contribute shillings Two Hundred (200) each in form of entrance fee which will be refundable.

SECRETARY

36. The Secretary shall be appointed by the Board for such terms at such remuneration and upon such condition as it may think fit, and any Secretary so appointed may be removed by the Board.

AUDIT

37. Auditors shall be appointed and their duties regulated in accordance with the ordinance.

Every account of the directors with the company, when audited and approved by the General Meeting, shall be conclusive, except as regards any error discovered therein within three months next after the approval thereof. Whenever any such error is discovered within that period, the account shall forthwith be corrected, and thereforth shall be conclusive.

WINDING UP

38. If the company shall be wound up the liquidator may, with the sanction of an extraordinary resolution of the company and any other sanction required by the ordinance divide amongst the members in specie or kind the whole or any part of the assets of the company and may for such purpose set such value as he deems fair upon any property to be divided as aforesaid and may determine how such division shall be carried out as between the members or different classes of members. The liquidator may, with the like sanction vest the whole or any part of such assets in trustees upon such trust for the benefit of the contributories as the liquidator, with the like sanction shall think fit, but so that no member shall be compelled to accept any shares or other securities whereon there is any liability.

INDEMNITY

39. Every director, agent, auditors, secretary and other officer for the time being of the company shall be indemnified out of the assets of the company against any liability incurred by him in defending in such capacity any proceedings whether civil or criminal in which judgement is given in his favour or in which he is acquitted.

ALTERATIONS OR ADDITIONS

Subject to the provisions of the ordinance and those contained in the Memorandum of Association of the Company the Board of Directors may be special resolution make alterations or additions and the alterations or addtions so made shall be valid and effectual as if they were originally contained in these articles and in the like manner be subject to alteration by special resolution.

Names, Addresses and Descriptions of Subscribers	Numbers of Shares	Signature:
1. FAUZIA JAMAL P.O. BOX 4051, DAR ES SALAAM	3	
2. HASSAN JAMAL P.O. BOX 4051, DAR ES SALAAM	2	

Dated at Dar es Salaam this 23rd day of August 1993.

WITNESS to the above Signatures:

SIGNATURE: Mulara

POSTAL ADDRESS: Box 2203
DSM

QUALIFICATION: ADVOCATE

EBONY AND COMPANY LIMITED of P.O.BOX 4051, DAR ES SALAAM- UNITED REPUBLIC OF TANZANIA

PONGWE MSUNGURA STONE QUARRY: FEASIBILITY STUDY

PRIMARY LICENCE NUMBER: 000796EZ

Effective Date: September 23th, 2011

Prepared by

Sasamuka Consulting & Contracting (T) Ltd

Head quarter: Mnazi Mmoja Street plot number 2253,

Block number 157, Location 225

NHC Bldg Second Floor P.O. Box 24188

Dar es Salaam.

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PROJECT BACKGROUND

Aggregates are not new to the construction sectors; however, up until approximately from 1960's very little was known or remembered. Remnants of this once great industry, which existed from approximately 1870 to 1915, are present in the architecture of many buildings in communities throughout the country. Some quarries were in existence in varying times during this period.

For many years, quarries, architects, and builders have been intrigued by the durability of the many buildings that are scattered throughout the country. Especially interesting are the unique carvings and facades that had been created with highly workable aggregates.

Enough interest was generated in the aggregate quarries that the client decided that this valuable resource needed to be explored. Not only, but they were also very interested in the potential of utilizing the huge deposit for use as building materials. The client was interested in this project for a number of reasons. The top reasons are the following:

1. To develop this valuable natural resource.
2. The potential of creating many new jobs in both in quarrying industries as well as jobs in support and value industries.

In the end of August 2011, M/S Ebony and Company Limited funded a study to investigate the potential development of aggregates quarry in the Pongwe Msungura Project area. They contracted with an experienced mining and quarry development consulting firm, Sasamuka Consulting & Contracting (T) Ltd, conduct the study, which will be known as SCC for the balance of this paper. Development of this study geared toward providing the information that a potential investor would ask about the stone resources in the Pongwe Msungura. Mr. S.G. Mushi on behalf of the SCC agreed to investigate and provide information on the following:

1. Confirm that the prices paid in the aggregate industry would justify the development of quarries in the Pongwe Msungura Project;
2. To develop, through research, a list of all stone. Each site will be located and pinpointed on maps for developers to refer to;
3. Evaluation of each site geologically and its feasibility for development as a aggregate stone quarry;

4. Select sites that have the best potential for development.

5. Investigate top sites more intensely – conduct sampling and geological mapping in selected sites to determine quantity and quality of stone.

6. Contact equipment suppliers and determine the recommended methods for extraction of stone from quarries.

7. Develop a general plan and cost estimate for quarry start-up operation, this will be general in nature, however, it will provide valuable information for investors entering into the aggregate stone business for the first time, as well as provide a checklist for experienced operators. Major equipment suppliers have agreed to provide quarry equipment, cost estimates and annual cost estimates for operating a quarry. This will be done on a quarry-by-quarry basis, depending on location and prospects for yield.

This study aims at providing ample information to the potential investors that would help them in preparing realistic business plan for the Stone Aggregate Quarry.

STUDY METHODS

SCC began this investigation in the 1st of September 2011. Little or no information was available to begin the project, with the exception of Regional geological and Aeromagnetic Maps of the QDS 167. The SCC initially started with a list of sites to be found and investigated. All sites that had potential were visited on at least one or more occasions and were evaluated.

This feasibility study aims at both financial and socio economic viability with in-depth financial analysis and sustainable socio economic benefits.

1. INTRODUCTION

Project area is found within Bagamoyo District at Pongwe-Msungura village in Coast Region. The area is located about 21 kilometres from Msata, the highway from Chalinze to Segera. Several exploration traverses and geological observation were done within the Project area by various prospectors from colonial time up to now. It has noted that almost the whole construction works done in the coastal zones depends on the aggregates produced from Msata and Lugoba. As due to the high demand of aggregates the client was attracted and contracted the SCC to conduct the FS.

During the early stages, mining activities were conducted at shallow levels and floated boulders; by the time the production of aggregates was done by manpower but later became difficult and complex as the demand increased. At higher depth and even complex structures of geology, modern technologies were decided to be acquired to increase the aggregates production, reducing time and production costs and increasing the profit.

The aim of the FS is meet the requirements and standard of mining business as well as to evaluate the economic viability of the project. The Environmental Impact Assessment and Environmental management Plan for the project area are in table negotiation with other consultants.

The marketing study is being undertaken by the owner and estimated the operating cost and designed the project. The profits obtained from the project enable to make the project at higher level, both in mining and marketing.

1.1. Location and Accessibility

The projects area is located within Usagaran system with geographical coordinates defined in the licences of quarter degree sheet 167/3 and map datum of Arc 1960. The area is remote but accessible, from Chalinze center you head towards Chalinze –Segera Road about 37.4 Kilometres where at Msata you turn to the west along Msata to Pongwe-Msungura Road via Pongwe-Msungura village office about 21 kilometres.

The area is passable in all seasons though sometimes with difficulty after very heavy rains, but it is much better a four wheel drive vehicle to be used other than two wheel drive. Access along the dirt

tracks to and within the property is frequently impaired directly after rainfalls, though mining and activities should not be serious affected during a normal rainy season.

Table 1: The Ebony and Company Limited concession defined by the following corner coordinates

Corner	Latitude (S)			Longitude (E)		
	Degree	Minutes	Seconds	Degree	Minutes	Seconds
A	6	19	27.58	38	11	29.60
B	6	19	27.58	38	11	47.75
C	6	19	30.50	38	11	47.75
D	6	19	30.50	38	11	29.60

1.2 Topography and Land Use

The area under project is dominated by major physiographic units. In the Northern part there is River, and the Pongwe Forest Reserve to the East. Different types of soil are found in the different topographical region. The along the streams are composed of a mixture of sporadic transported loamy or sand soils. Other areas often contain mbuga (black cotton) soil. Sandy soils dominate the area as a result of weathering of granites. The drainage is mainly controlled by the geological structure.

1.3 Stone - The Product

Granite is a product for aggregates, decorating walls or interior space of buildings. It is now one of the most essential building materials for the concrete, decoration, durability and protection of the buildings.

1.3.1 Granitic Gneiss

Granite is igneous rock of visible crystalline formation and texture. It is composed of feldspar (usually potash feldspar and oligoclase) and quartz, with a small amount of mica (biotite or muscovite) and minor accessory minerals, such as zircon, apatite, magnetite, ilmenite, and sphene. Granite is usually whitish or gray with a speckled appearance caused by the darker crystals. Granite is mainly preferred for its use in the exterior applications including funeral trade2. Variety of colours in Granite is traded in the world market with different price tags. High price is fetched for the rare colours including

Jet-Black, Pearl Blue and Deep Green. These colours are found in South Africa, Brazil, Norway, India and Pakistan.

The specific gravity of Granite ranges from 2.63 to 3.30. Granite has greater strength than sandstone, limestone or Marble and is correspondingly more difficult to quarry. It is an important building stone, and its maximum usage is in the external flooring and facing followed by internal flooring.

It is widely occurring type of intrusive, felsic igneous rock. Have a medium to coarse grained texture (pophyritic). Have about 20% quartz and about 35% alkaline feldspar by volume. It is nearly massive (lacking internal structure), hard, and tough. The rock has the average density of 2.7 g/cm^3, it is compressive strength lies above 200 MPa and it is viscosity at standard temperature and pressure is 3-6*10^{19} Pa**s.** Most of the surface rocks of this are moderately weathered and highly deformed structures almost all the surveyed points mentioned above.

1.4 Market Potential

Tanzania is among other producers of dimension stones, but Italy is the world leader in marble, granite, and stone sector, exporting over 38% of finished material and importing 18% of the world trade. Tanzanian's production is not yet analysed even though there are some company's started to invest on dimension stones but many of them invested on stone aggregate production. China is the biggest importer of Raw & Finished marble slabs and tiles (nearly double that of USA) in the world. The internal markets for the dimension stone will expand shortly as the producers advertise and produce the quality products with reasonable price.

Aggregates demand in the local market is huge as due to a lot of civil works and human development activities since 1990's. It has been noted that internal and external (international) market has not established perfectly. Unfortunately, many aggregates producers and suppliers are not in position to customer care units (or even market analysis) that can work on as normal business. This can widen up the market boundary, and increase the customers as well as company profit.

2. GEOLOGICAL SETTINGS

The stratigraphy of Tanzania (Table 2.1) is dominated by Precambrian, Mesozoic and Cenozoic rocks. The central part of the Tanzania craton is covered by Achaean rocks of the Dodoman system. The Nyanzian and Kavirondian systems occupy the northern part of the country (Figure 1).

Tanzania is mainly underlain by Archaean and Proterozoic rocks, mostly exhibiting ages of greater than two billion years (>2,000 Ma). The Archaean rocks date from 2,500 Ma to 2,800 Ma and form the Tanzania Craton, a component part of the African Plate, one of the world's largest slabs of continental crust. These ancient terrains host some of the richest base and precious metal mines in the world.

The Tanzania Craton of East Africa comprises granite-related lithologies (granites and granite-related gneisses) intruding and separating large and small greenstone belts. It is presumed to be underlain by the Uganda Basement Gneisses, which have been dated at 3,300 Ma and which in turn are thought to be equivalent to the West Nile Complex further to the west. The uncertainty arises from the poor exposure of the contact between the craton and the underlying gneisses on its northern boundary.

The east and southeast limit of the craton is marked by the Lower to Middle Proterozoic Usagaran Belt, dated at (2100-1800 Ma), and by the Late Palaeozoic (900-450 Ma) Mozambique collision belt. To the southwest, the (2100-1800 Ma) Ubendian Belt marks the edge of the Craton, whereas to the west the boundary is marked by the Late Proterozoic Karagwe-Ankolean Belt and the early Palaeozoic Bukoban System.

The Archaean of Tanzania can be divided into three units, the Dodoman gneisses of central Tanzania, the Nyanzian granite-greenstone terrain of the north and the overlying Kavirondian system of the Lake Victoria region. The latter lies unconformably upon the Nyanzian and is derived from it.

There is some speculation as to the relationship between the Dodoman and the Nyanzian. The Dodoman are regarded by some as equivalent to the Nyanzian, having been subjected to higher degrees of metamorphism, migmatisation and 'digestion'. Consisting of hornblende gneisses, amphibolites and haematitic quartzites (possibly Meta-banded ironstones), they appear to increase in metamorphic grade southwards where extensive charnockite-granulite facies gneisses are observed.

The craton to the far northwest is flanked by Mesoproterozoic belt known as Karagwe–Ankolean system which is overlain in the south and east by the Bukoba sediments. To the far East the craton is flanked by Neoproterozoic belt known as Pan – African Mozambique belt.

The Proterozoic Ubendian and Usagaran Systems (2,100-1,800 Ma) surround the Archaean and are composed of highly metamorphosed gneisses of largely reworked Archaean material. The Ubendian comprises mainly amphibolite-grade gneisses of igneous and sedimentary origin containing rare marbles. It is intruded by minor mafic and ultramafic rocks, and by late granites displaying a structural trend to the northwest.

The Karagwe-Ankolean System of Proterozoic age outcrops in northwest Tanzania along the borders with Uganda, Rwanda and Burundi, with subsidiary outcrops on the eastern shore of Lake Tanganyika. The system contains weakly metamorphosed rocks of shallow-water origin, including argillites, phyllites and quartzites.

Granites intruded into sediments form oval-shaped domes preserved by the resistant quartzites that surround them. In the northern part of the system, ultramafic rocks contain magmatically segregated nickel, cobalt and copper sulphides.

Located between the Karagwe-Ankolean System and the craton, a series of Palaeozoic sediments forms the Bukoban System, extending from Lake Rukwa to the Ugandan border. The Bukoban comprises weakly deformed sandstones, quartzites, shales, red beds, dolomitic limestones and lavas.

The southern-eastern part of Tanzania is underlain by the Late Permian to Jurassic Karroo Series. This system is prevalent all over southern Africa, reaching its northernmost outcrop in Tanzania. Essentially a series of coarse sandstones, shales and siltstones, it represents a continental sequence often accompanied by coal deposits. It rests unconformably on the underlying Proterozoic. North of Dar Es Salaam, the series continues as a marine sequence.

The Upper Mesozoic is represented by limestones, sandstones and shales, with local gypsum and salt in the coastal regions and calc-alkaline volcanics on the Tanzania Craton. Cenozoic events saw the incipient dislocation of the African Plate with rupturing occurring in the West and East African rift systems. In Tanzania, the Western rift is marked by Lakes Nyasa and Tanganyika while the Eastern, or

Gregory rift, passes through Lake Natron before joining the Western rift south of Lake Nyasa. Subsidiary rifts are found in the Selous Basin and at Lake Rukwa, where some Karroo rocks are preserved.

Other Cenozoic-to-Recent events include the intrusion of kimberlites, principally in the north-central part of the craton. Many are diamondiferous, including the Mwadui, the largest (in area) known kimberlite in the world. A number of the kimberlites were emplaced less than 50 million years ago.

Recent events include the development of laterite, silcretes and calcretes resulting from the tropical weathering of bedrock. These units are economically important as they can concentrate precious metals and diamonds, phosphates above carbonatites, nickel over ultramafics and gemstones over high-grade metamorphic rocks.

2.1 Regional Geology

The project area is situated at the South East part of the Tanzania Craton within the Palaeoproterozoic Mobile Belt of the Usagaran System (2.1-1.8 Ga). Lithologies comprise granitic and mafic rocks together with quartzite.

The rocks are predominantly meta-sediments of Usagaran age. The metasediments consist of alternating bands of quartzites and granite intrusion (1800 – 1850 Ma). Dominant structure is persistent NE to NNE to trending sequence of folded metasediments. Dips are generally steep. Minor folds plunging gently to the SW with axial planes, that trending parallel to the fold axes of the major fold. Schistosity, cleavage, folding, fracture-cleavage are prominent and much of folds are undisturbed. Throughout the area, the structure of the meta-sediments is cut by minor faults and joints.

The Usagaran System forms the south and east margin of the craton. The main rock types are granulites and biotite gneisses of pelitic origin, with quartzites also common. Granulite facies metamorphism is attained in a number of areas.

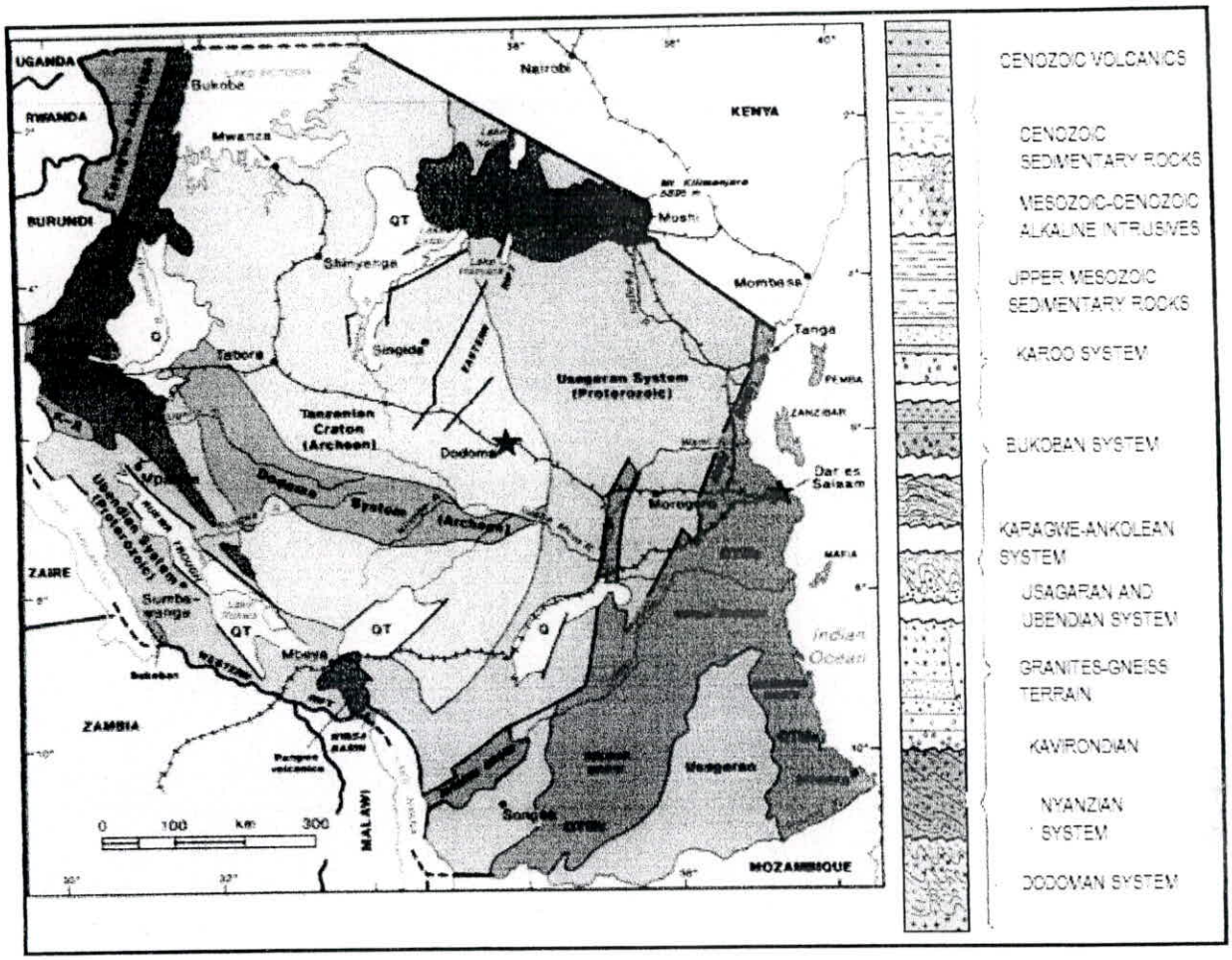


Figure 1: Geological Map of Tanzania

Table 2: Stratigraphy of Tanzania

PERIOD	TECTONIC DOMAIN	LITHOLOGY
Mesozoic To Recent	Younger formation	Sedimentary and volcanic rocks.
Lower Triassic Upper Carboniferous	Karoo sedimentary units	Sedimentary rocks with coal beds in some places like Ruhuhu and Kiwira basin.
Neoproterozoic (600-1000 Ma)	Pan – African Mozambique Belt (900-450 Ma),	Metapelites, metasemi-pelites, marbles, and anorthosites, ultramafic-mafic metamorphosed rocks. Conglomerates, sandstone, shales, mudstones, siltstones, dolomitic, limistones, cherts, quartzites, amygdaloidal lava.
	Bukoban Tectonic domain (1100-700 Ma).	
Mesoproterozoic (1800-1000 ma)	Karagwe-Ankolean (1300-1100 Ma) UKINGA GROUP (1350-1000 Ma)	Phyllitic shales and quartz-argillites, arenites, slates, schist, granite and migmatite gneisses. Phyllitic argillites, arenites.
Palaeoproterozoic (2100-1800 ma)	Usagaran (2100-1800 Ma)	Granite gneisses, quartzites, amphibolites, schists, granulites, granite intrusion (1800-1850 Ma) volcanics, rhyolitic lavas and tuffs agglomerates.
	Ubendian Belt (2100-1800 Ma)	Quartzites, schists, gneiss, amphibolite, granulites.
Late archaean (2500-3000 ma)	Kavirondian super group (2680-2600 Ma)	Sandstone, arkoses, conglomerates, Chert, tuff, ironstones, basaltic pillow lava.
	Nyanzian super group (2800-2880 Ma)	Ferruginous chert, Rhyolite & dacite tuffs, andesite lavas, basalt pillow lava.
	The Dodoma Tectonic Domain (3000-2759 Ma)	Quartzite, schist, amphibolite. Gneiss, migmatites, granites.

2.2 Local Geology

The area comprised of three major rocks of Usagaran system. The Biotite gneiss rock complexes were observed in the western part and, the northern part of the concession. The northern-eastern part composed of transition zone with mainly hornblende and garnet; pyroxenite probably igneous origin; pyroxene gneiss with Biotite and garneterous gneiss. Pyroxene gneiss complex mainly dominated eastern and southern part of the region area. These rocks determined by crystalline limestone, graphite quartzite; pyroxene gneiss with hornblende and garnet; pyroxene granulite, hornblende and Biotite. Mbuga and sand soils mostly were observed along streams crossing the project area.

2.2.1 Massive Granitic Gneiss with hornblende

It is extensively and massive type of extrusive, mafic igneous rock. Have fine to medium coarse grained texture (porphyroblastic). Hard and tough rock, have about 90% amphiboles /hornblende and about 10% felsic minerals (quartz and feldspar).

Outcrop observed at 0687377 E and 8793847 N; and 0687274 E and 8793856 N. Most of the surface rocks of this are moderately weathered and highly deformed structures almost all the surveyed points mentioned above.

Table 2: Rock Composition

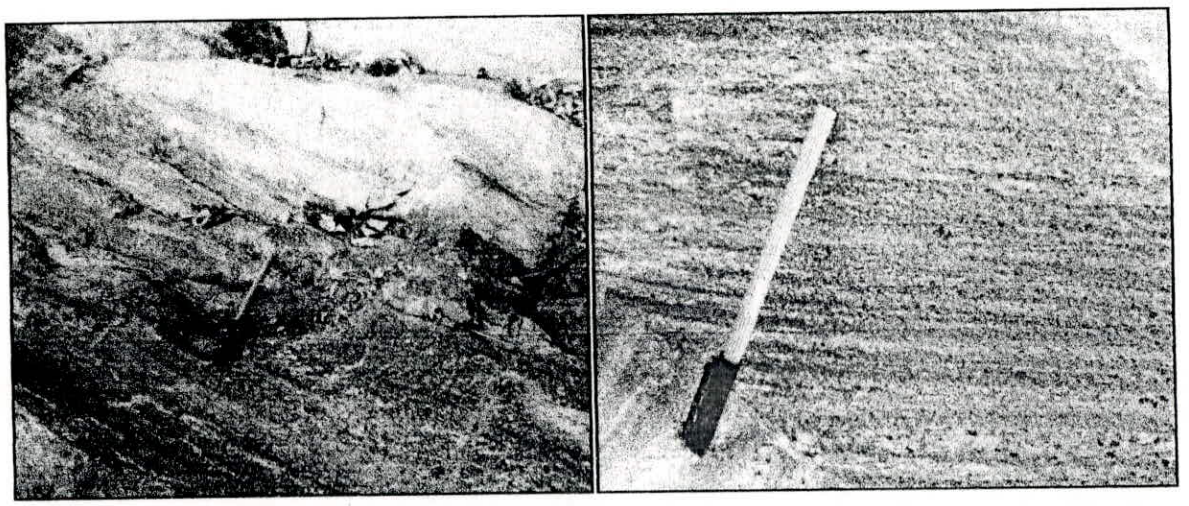
Chemical Formula	Composition in Percentage		Chemical Formula	Composition in Percentage
SiO_2	72		FeO	1.66
Al_2O_3	14.41		Fe_2O_3	1.22
K_2O	4.1		MgO	0.71
Na_2O	3.62		TiO_2	0.3
CaO	1.81		P_2O_5	0.12
MnO	0.05			

Sample #P1

Sample #P1

It is medium-grained rock with about 70% hornblende, 5% microcline, 10% oligoclase, and 25% quartz.

These granitic rocks are well jointed and it appears that the material now exposed in the pits would be suitable for precast panel aggregate. Other glaciated granitic rock rise above the soil in this part of the project area and these should be investigated in more detail.

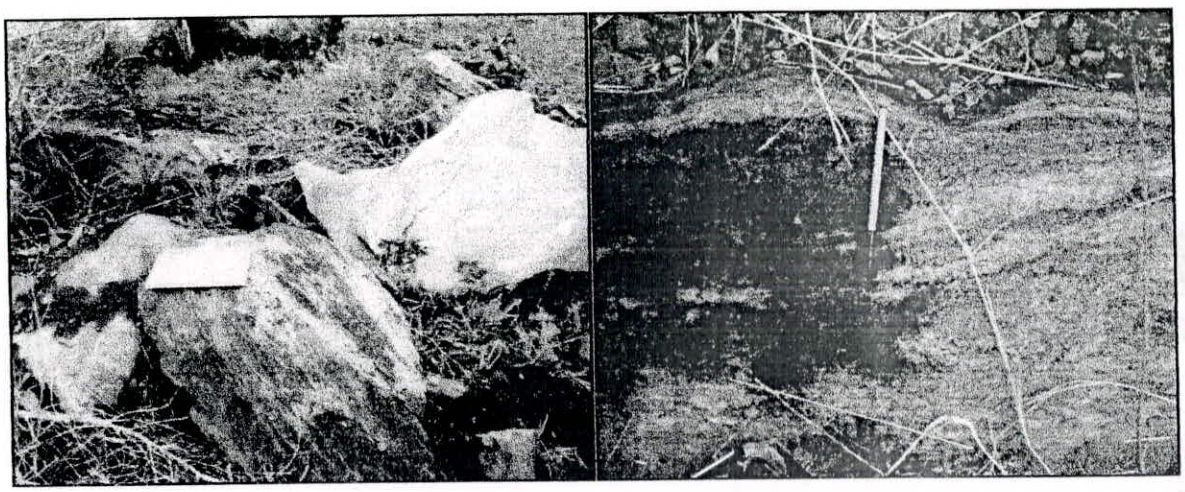


Several samples were taken up in these granites and the materials are suitable for aggregate. The samples are located in the defined coordinates. Logistics are well established for loading and facilities are present 21 km east of the project area (chalinze-segera highway) which is about 6 km from the village to the east.

Sample #P 2

It is medium-grained dark grey granite with 70% hornblende, 10% orthoclase and microcline, about 10% quartz and 10% plagioclase.

These granitic rocks are badly jointed but it appears that the material exposed in the pits would be suitable for aggregate. Other glaciated granitic rock rise above the soil in this part of the project area and these should be investigated in more detail.



Several samples were taken up in these granites and the materials are suitable for aggregate. The samples are located in the defined coordinates.

3. TESTING METHODS

3.1 Aggregate Abrasion Value

It is important we know that aggregate will not wear away, abrade, too quickly. This applies in particular to aggregate present in wearing courses and surface treatments. Therefore we need to specify aggregates that have a maximum abrasion value when they have been tested in accordance with a standard testing regime.

- With the test in a known mass of aggregate chippings are set in resin in a small flat test panel and subject to abrasion on a grinding apparatus that is fed with a known type of sand. The loss in weight of the aggregate after a specified time as a percentage of the original weight is the AAV.

- Alternatively, a known mass of aggregate is placed in a small rotating steel drum with a number of hardened steel balls. The drum is rotated for a set time and the material passing a specified fine sieve, at the end of the test, is regarded as abraded aggregate and this loss as a percentage of the original weight is the AAV by this method. AAV's required differ according to "weight" of commercial traffic per lane. A maximum value of 10 is specified for chippings/precoats for lanes carrying over 3250 commercial vehicles per day. A maximum value of 14 is sufficient for less than 250 commercial vehicles per lane per day.

  N.B: The smaller the number, the less the aggregate abrades. The exclusion of aggregate with low AAV's is particularly relevant to coated 20mm chippings, i.e. "precoats" applied to hot rolled asphalt wearing course layers.

3.2 Aggregate Crushing Value

This indicates the ability of an aggregate to resist crushing. The lower the value the stronger the aggregates, it implies the greater the ability to resist crushing.

A sample of 14 mm size chippings of the aggregate placed in a steel mould and a steel plunger inserted into the mould on top of the chippings. The chippings are subject to a force rising to 400kn over a period of 10 minutes. Usually by placing in a concrete crushing apparatus, the fine material, (passing a 2.36 mm. sieve), produced, expressed as a percentage of the original mass is the aggregate crushing value, (ACV).

3.3 **Aggregate Soundness**

This is a test to simulate weathering characteristics of an aggregate, or more precisely its ability to resist weathering.

The particular aggregate being tested is subject to a number of immersions in an aggressive solution of magnesium sulphate to hasten the degrading process the environment has on a road aggregate. After the aggregate has been subject to the testing regime the remaining weight of the aggregate is expressed as a percentage of the original weight.

It is a general requirement that road aggregate shall have a Magnesium Sulphate Soundness Value above 75. Aggregate Soundness tends to be related to the water absorption of an aggregate, i.e. an aggregate with a high moisture absorption value tends to have a low Magnesium Sulphate Soundness Value.

3.4 Aggregate Size

The size of an aggregate is not quite what it seems. The size of a particular aggregate will depend on what sieve sizes determine the grading of an individual material, or in the case of a quarry what screen sizes are used to separate out crushed aggregate. If you have a material where the normal sieve/screen sizes are, 37.5 mm, 28 mm, 14 mm, 10 mm, 6.3 mm etc., A 28 mm aggregate will be that aggregate which passes the 28 mm sieve and is retained on the 20 mm sieve.

So, in the case of a 28 mm. aggregate the size could be 27.9 mm or 20.1 mm. and still be regarded as a "28 mm. aggregate". This variance in true size can be a particular problem with surface dressing chippings, which are single size. It leads to such expressions as a "bold" 10 mm chipping, or a "small" 10 mm chipping,

meaning the bulk of the chippings are quite near the 10 mm sizes or the 6.3 mm sizes. Chippings being "bold" or "small" can necessitate a change in binder spread rates to ensure retention of the chipping, or to prevent "fatting up" of binder.

4. MINING AND QUARRING INDUSTRY

4.1 World Dimension Stone Trade

From a global view point the natural stone industry is growing rapidly. Since the beginning of the 1990's, production has risen annually by an average 7.3% and international trade has even increased by an average 8.7%. Worldwide natural stone extraction is meanwhile estimated at 150 million tons gross per year. Annual production of dimension stone after deduction of waste and cutting losses amounts to about 820 million square-meters – referred to a slab thickness of 2 cm. The total production value is estimated at 40 billion US $.

Technological changes in the last seventy years have increased the world production and consumption of dimensional stone. There are over 40 dimensional stone producing countries in the world. Amongst the 12 largest producing countries, 6 are in Europe and the same number in Asia and Africa.

Dimensional stone processing is being done with different levels of technology in different countries but a few leading countries such as Italy, China, Spain, Japan, Taiwan, Portugal, Germany, France, USA, and Greece have developed highly efficient technology with good forward and backward linkages. India has also improved this sector considerably in the last two decades. Consumption on the other hand is more wide spread phenomena with over 50 countries of the world making use of dimensional stone in considerable quantities. The quarrying and working of stone, already practiced in ancient times by the Egyptians and the Greeks, was greatly developed in Italy under the Romans. However towards the end of the 18th century, economic activity in the stone sector developed for the first time with the invention of gunpowder and the use of mechanical cutting. Dimensional stones are produced in more than 2 countries of the world while 12 of these producers are dominant in the international market i.e. 6 European countries and 3 each from Asia and Africa. Technological advances in the last seventy years had increased the world production and consumption of dimensional stones to 150 million tons while, consumption came to about 8.8 billion square feet (820 million square meters), generating overall turnover of $40 billion2. The majority of world consumption comes from material that is quarried in different countries than those where it is eventually installed. The leading producers -- China, India,

Italy, Spain and Portugal account for 53% of world quarrying production. The driving force in the sector was international trade, which is just under 29.6 million tons and equal to about 4.8 billion square feet (450 million equivalent square meters) and has reached US$ 8.6 billion mark in 2004 with an annual average increase of 13% while China has shown the largest increase in its export value i.e almost 28% annually over 4 years. Italy, China and Spain are the major players in the international market and exported more than 55% of the dimensional stone's products (blocks and processed) by value. Other major exporters include Brazil, Spain, India, Turkey and Portugal.

Major importers of Granite products (processed and unprocessed) are Italy, USA, Japan, Germany, Italy and China and more than 60% of the products are directed toward these countries.

4.2 Local Dimensional Stone Industry

Granite is included in the list of largest minerals extracted among coal, chromites, rock salt, lime stone, china clay, dolomite, fire clay, gypsum, silica sand etc. Since 1990 mining & quarrying in general consistently contributed to about 2.6 percent to the Gross Domestic Product. Production of Granite has grown substantially in the last twenty five years with total standing at about 2-5 million tons. It has been accompanied with high quarry wastage ranging from 61-73% in addition to poor quality, mainly due to unwieldy blasting techniques.

Processing industry is using wide array of technological options for basic as well as finishing stage, all of vintage age. Due to technological imbalance, wastages are around 52% to 55%. Presently the processing industry relies upon local manufacturers of machinery and equipment with a very few calibrated and high efficiency machines from reputable international suppliers.

The Granite Processing industry is closely related to the development of building materials, the modernization and vitalization of which leads to the progress of the tile industry. It shows a trend towards increasing use in modern architecture.

However, even though the market demand of dimension stones in the local market is undetermined the company's producing has not established internal market. It has been observed that very few number customers from inside buying the product as due to some reasons. Most of the product prices are low and quality of the imported dimension stones high compared to the internal product.

4.3 Local Market for Aggregates

The civil works in the country has been increased severely since 1990's and this guarantees the supply demand for the aggregates. All the coastal regions (Morogoro, Tanga, Coast, Dar es Salaam) and any other regions nearby has been established a huge number of civil works, such as tarmac roads, bridge as well as building constructions.

The project has confirmed to have sufficient deposits of stone for the dimension and aggregates. Durability

Appendix (iii)

EBONY AND COMPANY FIXED ASSETS SCHEDULE

NAME OF ASSETS	2011 USD	2012 USD	2013 USD	2014 USD	2015 USD
Land And Buildings	300,000	285,000	270,000	255,000	240,000
Machinery, Tools & Equipment	1,400,000	1,225,000	1,050,000	875,000	700,000
Motor Vehicles	270,000	243,000	236,000	229,000	222,000
Furniture & Fixtures	15,000	13,125	11,625	10,125	8,625
Total	**1,985,000**	**1,766,125**	**1,567,625**	**1,369,125**	**1,170,625**
DEPRECIATION	**2011 USD**	**2012 USD**	**2013 USD**	**2014 USD**	**2015USD**
Land and buildings	15,000	15,000	15,000	15,000	15,000
Machinery tools & Equipment	175,000	175,000	175,000	175,000	175,000
Motor Vehicles	27,000	7,000	7,000	7,000	7,000
Furniture & Fixtures	1,875	1,500	1,500	1,500	1,500
ANNUAL DEPRECIATION	**218,875**	**198,500**	**198,500**	**198,500**	**198,500**
CLOSING FIXED ASSETS	**1,766,125**	**1,567,625**	**1,369,125**	**1,170,625**	**972,125**

Appendix (IV)

EBONY AND COMPANY LTD PROJECTED INCOME & EXPENDITURE STATEMENT

	2012	2013	2014	2015	2016
Sales Revenue	1,529,250.00	2,293,875.00	2,982,037.50	3,876,648.75	5,039,643.38
Cost of Sales	764,625.00	1,146,937.50	1,580,479.88	1,938,324.38	2,771,803.86
Gross Profit	**764,625.00**	**1,146,937.50**	**1,401,557.63**	**1,938,324.38**	**2,267,839.52**
Operating Expenses:					
Installation costs	168,217.50	252,326.25	328,024.13	426,431.36	554,360.77
Motor vehicle running expenses	18,400.00	23,368.00	29,677.36	37,690.25	47,866.61
Salaries and Wages	153,757.00	215,259.80	279,837.74	391,772.84	509,304.69
Other administrative Expenses	138,629.00	152,491.90	167,741.09	184,515.20	202,966.72
Marketing Costs	18,500.00	20,350.00	22,385.00	24,623.50	27,085.85
Utility costs	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00
Communication	7,500.00	9,000.00	10,800.00	12,960.00	15,552.00
Pension	15,375.70	21,525.98	27,983.77	39,177.28	50,930.47
Total Operating Expenses	**523,379.20**	**697,321.93**	**869,449.09**	**1,120,170.43**	**1,411,067.11**
Operating profit	**241,245.80**	**449,615.57**	**532,108.54**	**818,153.95**	**856,772.41**
Interest	45,000.00	45,000.00	45,000.00	45,000.00	
Depreciation	271,375.00	271,000.00	271,000.00	271,000.00	271,000.00
Profit before tax	**(75,129.20)**	**133,615.57**	**216,108.54**	**502,153.95**	**585,772.41**
Tax (30%)	(22,538.76)	40,084.67	64,832.56	150,646.18	175,731.72
Profit After Tax	**(52,590.44)**	**93,530.90**	**151,275.98**	**351,507.76**	**410,040.69**
Cash Profit (PAT+Dep)	218,785	364,531	422,276	622,508	681,041
Accumulated Cash Profit	218,785	583,315	1,005,591	1,628,099	2,309,140

Appendix (v)

EBONY AND COMPANY LIMITED PROJECTED CASH FLOW US$

	2012	2013	2014	2015	2016
CASH INFLOW					
Profit/Loss Before Interest and Depr.	(256,651.00)	471,141.00	560,092.00	857,331.00	907,702.00
Equity	1,700,000.00	-	-	-	-
Bank Loan	750,000.00	-	-	-	-
Total Inflow	**2,193,349.00**	**471,141.00**	**560,092.00**	**857,331.00**	**907,702.00**
CASH OUTFLOW					
Capital Expenditure	2,185,000.00	-	-	-	-
Working Capital	5,000.00	5,000.00	5,000.00	5,000.00	5,000.00
Corporate Tax	-	40,084.00	64,832.00	150,646.00	175,731.00
Subtotal Cash Outflow:	**2,190,000.00**	**45,084.00**	**69,832.00**	**155,646.00**	**180,731.00**
Debt Servicing:	-	-	-	-	-
Interest Charges	45,000.00	45,000.00	45,000.00	45,000.00	45,000.00
Loan Repayment	232,500.00	232,500.00	232,500.00	232,500.00	232,500.00
Total Debt Servicing:	**277,500.00**	**277,500.00**	**277,500.00**	**277,500.00**	**277,500.00**
Total Out flows	**2,467,500.00**	**322,584.00**	**347,332.00**	**433,146.00**	**458,231.00**
ACCUMULATED CASH	**(274,151.00)**	**148,557.00**	**212,760.00**	**424,185.00**	**449,471.00**

Appendix (vi)

EBONY AND COMPANY LTD PROJECTED BALANCE SHEET US $

	2012	2013	2014	2015	2016
Fixed Assets					
Long-term Assets	2,185,000.00	1,837,500.00	1,575,000.00	1,312,500.00	1,050,000.00
Depreciation	271,375.00	271,375.00	271,375.00	271,375.00	271,375.00
Total Long-term Assets	**1,913,625.00**	**1,566,125.00**	**1,303,625.00**	**1,041,125.00**	**778,625.00**
Current Assets					
Cash	(274,151.00)	148,558.00	212,760.00	424,185.00	449,471.00
Working Capital	5,000.00	5,000.00	5,000.00	5,000.00	5,000.00
Total Current Assets	**(269,151.00)**	**153,558.00**	**217,760.00**	**429,185.00**	**454,471.00**
Total Assets	**1,644,474.00**	**1,719,683.00**	**1,521,385.00**	**1,470,310.00**	**1,233,096.00**
Financed by:					
Bank Loan	750,000.00	-	-	-	-
Equity	1,700,000.00	-	-	-	-
Retained Earnings	218,785.00	583,315.00	1,005,591.00	1,628,099.00	2,309,140.00
Total Financing	**2,668,785.00**	**583,315.00**	**1,005,591.00**	**1,628,099.00**	**2,309,140.00**

Appendix (viii)

PAYBACK PERIOD

Year	Profit After Tax	Depreciation	Total Cash Flow	Accumulative Cash Flow
2012	(52,590.00)	271,375.00	218,785.00	218,785.00
2013	93,530.00	271,375.00	364,905.00	583,690.00
2014	151,275.00	271,375.00	422,650.00	1,006,340.00
2015	351,507.00	271,375.00	622,882.00	1,629,222.00
2016	410,040.00	271,375.00	681,415.00	2,310,637.00

Initial Investment Cost= USD2200000
From above table, payback period is within 5 years

Appendix (IX)

PROJECTED LONG TERM LOAN REPAYMENT

		Repayments US$		
Year	**principle**	**Loan Interest (6%)**	**Total Amount Paid**	**Loan Balance**
0				750,000
1	187,500	45,000	232,500	562,500
2	187,500	45,000	232,500	375,000
3	187,500	45,000	232,500	187,500
4	187,500	45,000	232,500	0
TOTAL	750,000	180,000	930,000	

Carriage outwards

Carriage outwards will be charged as per ton (negotiable).

Repair and maintenance

Cost of repair and maintenance is assumed @ 5% of fixed assets excluding land and plant and machinery with 5% increase in coming years

Water charges

Water charges are assumed at a lump sum amount of 200,000 per annum with 5% increase in coming years.

Insurance

Insurance will be necessary to cover in case of accidents etc. 0.75% of plant and machinery and 2% of vehicles value will be charged with 5% increase in coming years.

Excise duty and Royalty

Excise duty is taken 30% and royalty charges are taken as 3%

Contingencies

Contingencies are assumed to be 5% of fuel, power and lubricant cost and stores consumed.

Legal and Professional Charges

These include audit, tax and consultancy charges and are taken @ Tsh. 1,000,000/- per annum with 5% increase in coming years.

Newspapers and Periodicals

These are taken @ Tsh.120, 000/- per month with 5% increase in coming years.

Entertainment

Refreshment for customers and employees of office @ Tsh.200,000 per month

Bank Charges

All Bank charges and any other charges required. These are taken @ 0.5% of sales.

7.3 Depreciation on Assets

Depreciation on the assets has been charged at the following rates:

Plant and Machinery - 20%

Building - 5%

Furniture & Fixtures - 10%

Vehicles - 20%

7.4 Production Schedule

Sale price per ton has been assumed as Tsh. 150,000/-, 120,000/- and 100,000/- for 37.5 mm, 28 mm, 14 mm, 10 mm, 6.3 mm etc., respectively.. Quarry at 100% efficiency will produce following tons.

Table 10: Production schedule

Sale Price		
Sizes	**Production (Tons)**	**Assumed Sales price per ton**
28 mm 20% Production	1,600	150,000
14 mm 40% Production	3,200	120,000
10 mm 40%	3,200	100,000
TOTAL	**8,000**	

PRODUCTION SCHEDULE						
Description		Years				
		1	2	3	4	5
Capacity Utilization	100%					
Production per years	8,000	4,000	44,800	6,400	7,200	7,600
28mm, 20% Production	1,600	800	960	1,280	1,440	1,520
14mm, 40% Production	3,200	1,600	1,920	2,560	2,880	3,040
10 mm 40%, Production	3,200	1,600	1,920	2,560	2,880	3,040
TOTAL	**8,000**	**8,000**	**4,800**	**6,400**	**7,200**	**7600**

8. THE FINANCIALS

8.1 Projected Income Statement

MODEL QUARRY-PROJECTED PROFIT AND LOSS ACCOUNT					
	Year 1	Year 2	Year 3	Year 4	Year 5
SALES	472,000,000	566,400,000	755,200,000	849,600,000	896,800,000
Operating Cost (administration marketing and other expenses)	(372,055,000)	(380,158,800)	(388,931,259)	(398,432,207)	(417,062,007)
NET PROFIT BEFORE TAX	99,945,000	186,241,200	366,268,741	451,167,793	479,737,993
Provision for taxation 30%	-	-	-	135,350,338	143,921,398
PROFIT/(LOSS) AFTER TAX	**99,945,000**	**186,241,200**	**366,268,741**	**315,817,455**	**335,816,595**
Un-appropriated profit/(loss) b/f	-	99,945,000	286,186,200	295,000,735	300,015,747
	99,945,000	286,186,200	652,454,941	610,818,190	635,832,343
Appropriate of profits	-	-	357,454,206	310,802,443	635,832,343
Un-appropriated profit/(loss) carried forward to balance sheet	99,945,000	286,186,200	295,000,735	300,015,747	-

TAXATION

No tax has been taken in the first three years as initial depreciation allowance is available. In fourth and fifth year tax @30% of net profit is taken.

9. MINING

9.1 Mining Methods and Pit Design

All outcrops observed within the project area are suitable for the aggregates or dimension stones. The only thing that defer within the outcrop observed is the percentage of silica in the rock type. Method to be used is an open pit mining operations.

The anticipated rate of production can be improved by using modern technologies as described earlier. All technical aspects should be improved and been supported in an appropriate manner. Consequently, crushing plants needs improvement in order to reach the targeted quantity of aggregates produced. Open pit method is adapted and recommended to meet the more profit from the project area. Some of the various equipments proposed here are highly required in the open pit mining.

Mine design criteria is based on a conventional surface mine operation using 15 m^3 shovels for rock loading and a 10 m^3 excavator for ore loading. A mixed fleet of 10 t class and 20 t capacity trucks accomplishes haulage.

The geotechnical and slope stability should be done carefully by considering the haul road for the largest vehicle being the over 20 tones capacity haul trucks. For double lane traffic, the minimum width is 26 m and includes a 1 m wide drainage ditch and a 2 m high safety berm. For single lane traffic a minimum width of 16 m to be used. The maximum road gradient is 10%.

9.2 Drilling

The drilling in the project area will be carried out on the rock surface after doing geotechnical survey. At the surface will use jack hammer with pusher leg while at the surface the operations of drilling will be of two legs. The holes will be covered safely ready for the blasting and all precautions will be taken into account.

9.3 Loading and haulage

Excavator/trucks haulage system will be used for this project. The broken rock will be loaded, hauled and dumped to the crusher. Desired sizes of aggregates or even fine materials will be dumped at the specific dumps area. One excavator and five trucks will do the loading and hauling while the remaining dozer will clear the ground and do other tasks as according to the mining plans.

It is proposed that, haulage system changed to belts conveying haulage system because of unpredictable fuel prices whenever the operation becomes uneconomical advantage. High angle conveyors (>40°) are in use nowadays for carrying the material from the open pits and shafts of underground mines. There are many designs in the market but retractable boom type is proposed because it has lower capital cost, lower profile, greater stability and faster relocation. Other advantages of belt conveying system over excavator/trucks haulage system include; higher throughputs, lower maintenance and running costs, all weather application and few accident.

Table 5.1 Estimated Ore Reserve in Primary Mining Licence No. 000796EZ

DESCRIPTION	ESTIMATED VALUES
Average vein width (m)	100
Outcrop Dip	25-45
Strike considered (m)	300
Depth considered (m)	150
Specific gravity (t/m^3)	2.7
Assumed area (m^2)	45,000
Volume (m^3)	4,500,000
In situ tonnage (t)	12,150,000
Allow 5% estimation error of reserve	0.95
Estimated rock reserve (g)	11,542,500.00
Approximately estimated reef (t)	**11.5 millions**

9.4 Mineral Processing

The conveyor belts will be fed to the single toggle jaw crusher that discharges materials in sizes as required. The crushed product passes through belt conveyor number one to the single deck vibrating screen for screening purposes. The overflow sizes of aggregates (e.g >25 mm) goes back to the jaw crusher via belt conveyor number two whereas the underflow passes through belt conveyor number three and accumulate to the storage bin.

Dust control will be an integral part of the process plant operations. This will entail the use of hired water carts (temporarily) on unsealed sections of the plant areas and sprays on the ore stockpiles. Other safety issues will be undertaken as per the mining act (safety working and occupational healthy) and its regulations, 2010.

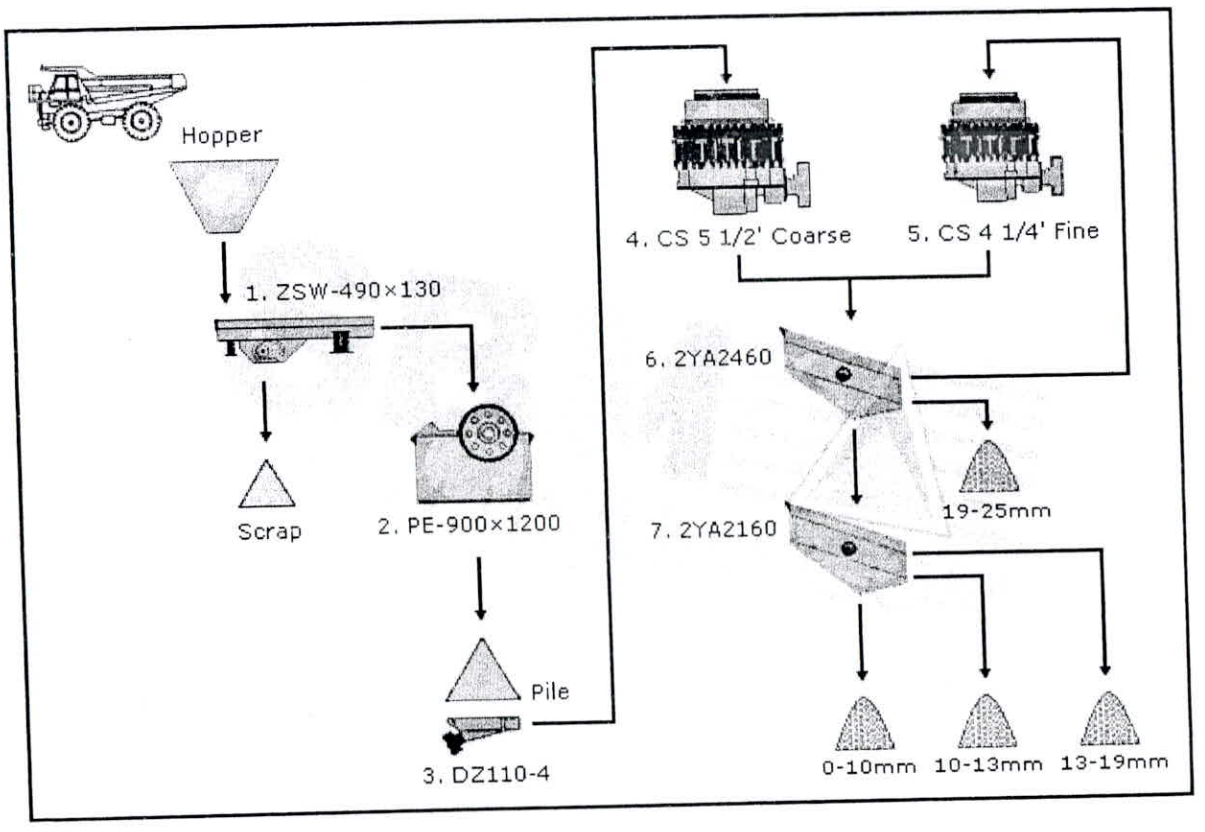


Figure 2: Sketch plan of the processing plant

10. OTHER RELEVANT DATA AND INFORMATION

10.1 Water supply, Climate and Vegetation

The area is generally dry, dust in the winter months, and experiences two rainy seasons; short rains from November to December and long rains from February to May. The average rainfall is around 600-800 mm, and rain can severally impede access, especially in areas of mbuga cover. All rivers in the licences area drain into the Wami River. Licences are located on a plateau averaging around over 300m above sea level.

Generally, the area covered by miombo woodland, which is in places mature and pristine. Deforestation is associated with charcoal making and cattle farming. Subsistence agriculture is dependent upon maize, and mixed farming in some places.

Several options were considered in the FS before deciding to propose a diversion dam with spillway on the streams that will divert water and then Wami River, during the wet season, into an off channel reservoir. The pond upstream of the diversion dam will have a storage capacity of 100,000 m^3 but will decrease in time by siltation and annually by evaporation. This water will be available for use by the local population.

The off-channel reservoir as part of a network of at least two Reservoirs proposed, with 1 storing water from the Rain and the second one, the Bulk Storage Reservoir, being used also to accumulate and recirculate decant water from the tailings pond. The strategy developed for the network of reservoirs is to ensure full reservoirs at the end of the rainy season and to sequentially draw down each reservoir, the Bulk Storage Reservoir being last, to satisfy demand during the dry season and consequently reducing evaporation surfaces. Alternatively, the Bulk Storage Reservoir can be fed to the plant continuously to control dust.

10.2 Mine Hydrogeology and Pit Dewatering

The water table is approximately 20 to 80 m below surface in the vicinity of the surface mine (higher at which is close to the River). A Numerous boreholes will be drilled and the groundwater will be extracted using submersible pumps. The groundwater flow is expected to reduce over the life of the mine since the pumping capacity will be greater than the recharge. The initial dewatering volume is predicted to be 18,000 m^3 per month.

Approximately 2 boreholes will be drilled around the circumference of the surface mine to an average depth of 65 m and separate submersible pumps installed in each borehole. All boreholes will be connected to a common pipeline around the surface mine perimeter that will deliver water to the plant clean water pond for use in the process. A branch line from the perimeter main will also provide water to a small pond near the mine perimeter for use by water trucks for dust suppression when water is not available from the in-mine pumping system. Water requirements for dust control are estimated at 126,000 m^3 /y.

To dewater the pit bottom, a sump will be created in the bottom of the surface mine to hold approximately 100,000 m^3 water from wet season rains on the surface mine catchment area. A pair of two submersible pumps and two slurry pumps (one operating, one standby), the latter on a skid frame for ease of movement, will be installed in the bottom of the surface mine to pump any seepage and wet season excess water from the mine. Additional slurry pumps will be added over time to stage pump the water with increasing pit depth. At the commencement of operations, the in-mine pumping system will be designed to pump approximately 100,000 m^3 (planned surface mine wet season storage capacity) in a period of two months over a total head of 50 m. Water will be pumped to the plant dirty water pond for use in the process with a branch line to the pit reservoir for use by water trucks for dust suppression.

Upon mine closure, the rate of evaporation will exceed the direct rainfall and groundwater seepage and it is planned that the surface mine lake will be artificially recharged by diverting the rivers into the surface mine as this will ensure that the surface mine lake is of good quality.

10.3 Potable Water and Sewage Treatment

Potable water will be supplied from boreholes that have been tested and are suitable for human consumption. Water treatment will comprise filtration, chlorination and UV. In total, two sewage plant will be installed for the mine plant area and one for the mine village.

10.4 Water Balance and Management

The project site will be a zero-discharge operation. Water that has to be collected at the mine site includes:

- Water that accumulates in the storage facility, including direct precipitation.
- Precipitation pumped from the mine (mine infrastructure, rock/overburden dumps, open pit mine).
- Direct precipitation on the dust control pond.
- Direct precipitation on the Bulk Storage Reservoir.
- Direct precipitation on the off-channel storage reservoir.
- Dewatering well yields.

The inflows to the storage facilities are the water from the reservoirs and runoff from precipitation. In order to minimize the water storage, the water from the runoff will be diverted to the Bulk Storage Reservoir on a flow through basis. The losses to the system are water retained in the evaporation and seepage. The difference between the inflows and losses is the water available for recirculation to the plant via the Bulk Storage Reservoir. Process water is also re-circulated from the tailings thickener to the plants. Because the tailings will be non-segregate or any other is significantly reduced in the later years of production when the stone is predominantly not sorted.

The dewatering wells combined are designed to yield 5 m^3/hr. A portion of this flow will be used to meet the plant fresh water requirements. Any excess water from the wells can be used as process water or for dust control.

The system must be in balance year over year. If there is a deficit of water in the system, the required volume is taken from the River through the off-channel storage reservoir. If there is a surplus of water in the system during the wet season, the water can be stored in the Bulk Storage Reservoir to be used in the dry season.

The water in the Bulk Storage Reservoir could be potentially contaminated because it receives the net inflow from the storage facility. The Bulk Storage Reservoir must be designed with adequate capacity, including containment of inflow from a pumping event, to prevent discharge to the environment.

The precipitation pumped from the surface mine will be stored in the dust control pond. Any deficit in water for dust control from the pond will be compensated with water from the dewatering wells or the off-channel reservoir. In a wet year, runoff from precipitation can be held in the pit sumps, if needed. Any excess of water not used for dust control can be used in the process plant.

10.5 Fuel Supply

Petroleum-based fuels are a major input to the Project, not only for the mobile fleet but for the generation of electricity.

10.5.1 Fuel Supply and Storage

Tanzania has no domestic oil production and must import all of its fuels through ports in Dar es Salaam. Typically, fuels are imported and stored temporarily in large reservoirs at ports and then transported by tankers the user's upland. The project will need both diesel for the mobile fleet, and heavy fuel oil for the power generators.

At the site, tank farms will be built with total capacity of 20,000 litres of heavy fuel oil and 100,000 litres of light fuel oil. Temporary storage will be installed for construction and subsequently integrated to the permanent arrangement.

11. MINING DEVELOPMENT

11.1 Production Plan

As discussed earlier, it was decided subsequently to take advantage of the excess crushing capacity of the processing facility in the early years of operations, when the feed predominantly started, and schedule a milling total of 800 ton per year for that period. Mining will be accomplished with phases to achieve the final pit limits. The objective of pit phasing is to improve economics by feeding the crushing plant during the earlier years and to defer towards the later years. The mine design provides for about 800 ton of aggregates of various sizes at an average production rate of 33 ton per month for the first year and expected to increase in the next years.

The mine production schedule includes a six month pre-production period during which time the overburden will be pre-stripped and some rocks will be stockpiled. At the start of commercial production, the rock stockpile that will be crushed and processed to the desired aggregates sizes by the first year of production. The waste material mainly will be used for the ROM pad construction and tailings dam construction. The great majority of waste material will be stored in the main Overburden Storage Facility which will be located on the selected place of the project area such that it is on the same side as the exit. The waste dump has been positioned in order to keep the dump toe line at least 500 m from any surrounding village. To meet this requirement a small portion of waste will be stored in a satellite OSF on the either side of the project area.

An overburden characterization campaign was conducted for the FS and concluded that a very limited amount of the overburden may have the potential to generate acid rock drainage. The none Potential Acid Generating nature of this deposit results from the relatively low acid generating potential (maximum sulphide sulphur was about 0.20-0.49 % sulphur), the wide distribution of acid neutralizing potential, and the fact that Neutralising Potential tends to be higher in the deeper rock where Acid Generating Potential also increases.

11.2 Mining Equipment

Most of the equipment will be purchased during pre-production. All equipments need to be purchased in the first year as nature of work requires blasting. Mine life depends very much on the production rate but for the estimation it has been expected to last for about 11.5 millions.

11.3 Mine facilities and maintenance operations

Other mining infrastructure involves a mine office complex (mine offices, change house and canteen), equipment workshop with overhead cranes integrated to the main warehouse and blasting and explosives compound including magazines, diesel storage and dispensing facility and a drill core storage facility.

The project will be performing directly the maintenance of its mobile equipment fleet. Consequently, the maintenance department will include experienced expatriates that will be responsible for managing this function, performing maintenance planning and training the national employees.

A maintenance control system will be used to manage maintenance and repair operations. This system will keep up to date status, service history and maintenance needs of each machine. The specific software package will be selected to interface with the parts management and inventory system. The Information Management System (accounting, purchasing and inventory) will be Great Plains, which is a Microsoft Support Business Solution. This is the system used currently at the project site. Component rebuilds are planned to be performed by the regional dealer.

11.4 Mining Operating Costs

Mining operating costs increase steadily for the following reasons:

- increasing costs for drilling and blasting as mining progresses.
- increasing haulage costs as the pit gets deeper.
- Lower annual tonnage beyond the tenth year of production.

12. CONCLUSION AND RECOMMENDATION

Generally, as described earlier the rock formation is characterized by both flat and steeply dipping structure colours.

The FS has highlighted the importance of the project in which the rock formation and deposit has found reasonable for investing. However, the continuity of these rocks is not well established (estimated) but they appear to form discrete outcrop within relatively continuous rock formation, with minor fractures. The silica contents were established (sample results) and this is more important factor used in considering machine type.

The following program is recommended by SCC (T) Limited as important to the project development and planning process to extend the Life of Mine:

- Resource calculations for surface satellite deposits in the area.
- Exploration of resource extensions.
- Mapping of structural details within the pit benches and training of geologists and geotechnicians in grade control standards (aggregates/dimension stones).
- Scout drilling of depth extensions to evaluate potential for reserve growth at higher product prices.
- Ongoing evaluation of prospects on the adjacent permits and development of a business plan and renewal of permits.

For the case of Mining SCC recommends the following additional studies:

• Detailed geological and geochemical characterization of the rock type contained within the area to confirm the non acid generating nature of the materials and the risks regarding heavy metal leaching for certain materials, if applicable.

• Optimization studies regarding waste disposal within the overburden storage facility to minimize long-term environmental impacts.

The rock type and description examined in the area and the potentiality for the aggregates making has discovered.

One of the major concerns that the granite rocks observed around the area was the quality of the rock. Of the thirty plus surface explored, less than one half of them had quality stone. The caution here is that all rocks are not the same. As deposits are selected, it is vitally important that the stone be tested for strength and chemistry. The stone must pass a rigorous testing procedure to be approved.

Another major concern is the amount of overburden (unused stone and soil) covering the rock. Some very good rock deposits may be left because of the increasing depth of the overburden, making it cost prohibitive to continue to produce. Some places of this site still have potential because of the increased value of the rock in modern times. Also, with more modern equipment it is less costly to remove overburden. The granite deposits are extensive; most of the area examined, showed excellent colours and potentially could produce good quantities of stone aggregates.

The results show that, the aggregate soundness value is between 70-75% whereas the abrasive value ranges between 20-30% and has described that the resistance to the crushing is low. However, some of the granites outcrop were found weathered and fractured on the surface.

13. REFERENCES

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14. CERTIFICATES

As described in DFS of December, 2008

CERTIFICATE OF QUALIFIED PERSON (QP)

As an author of a portion of this report, I, Samson Mushi do hereby certify that:

1. I am, Managing Director of SCC (T) Ltd., P.O Box 24188, Dar Es Salaam; 225-Mnazi Mmoja, Plot number 2253, certify that:
2. I have graduated from Dar Es Salaam University, United Republic of Tanzania with a B.Sc. In Geology in 2002, from the UNESCO-IHE, The Netherlands with a M.Sc. in Environmental Science (Science and Technology) in 2011.
3. I have worked in the mining industry continuously since my graduation from university.
5. I am responsible for the preparation of the update of the Technical Report entitled "Pongwe Stone Project: Feasibility Study – Pongwe Project, Tanzania" dated September, 2011.
10. As of the date of this certificate, to the best of my knowledge, information and belief, the Technical Report contains all the scientific and technical information that is required to be disclosed to make the Technical Report not misleading.
11. I consent to the filing of the Technical Report with any stock exchange or any regulatory authority and any publication by them, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.

Dated at Morogoro, this 23th day of September, 2011.

/s/ Samson Mushi

Signed: Samson G. Mushi (MSc. Environmental, BSc. Geo) Science Geologist & Managing Director
SCC (T) Ltd

APPENDIX A - Comprehensive Site List

This appendix contains the details that have been gathered on each site. The information on each site has been grouped into five categories. The following chart shows each category and also shows a brief summary of what type of information that particular category describes.

Rock Type	Stone Type Describes the geological name for that stone.
Rock Description	Gives a more qualitative description of the stone – texture, colour, etc.
Site Location	Gives the plat location for this site. Gives a qualitative description of the location of this site – landmarks, directions to get there, etc.
Field Notes	Gives information that we obtained from other sources Information that SCC has gathered, through field visits, on the site.
Development Potential	An attempt by SCC to classify the potential each site has for quarry development.

The sites have been numbered sequentially. Two sites have been established but it does not mean that only two sites are available for the project development. The Sites proposed were found through suggestions by residents, field investigations, and other methods. Huge numbers of outcrop (surface rock exposed) were observed to the northern part of the concession. The southern part most of the outcrops are covered with soil.

OUTCROP # 01

Rock Type	Hornblende gneiss
Rock Description	Dark grey groundmass with light pink phenocrysts. The surface rock is resistant, but does weather slightly. Mineralogy, the rock composed of hornblende, quartz, orthoclase, and plagioclase. Minor Joints are widely spaced and very large rock blocks could be quarried from this site. Exposed surfaces are dark gray and show only slight weathering.Under the microscope, a thin section of this sample shows that microcline forms at least 5% of the rock, quartz 25%, and oligoclase 10%. Biotite, muscovite, sphene and carbonate are also present.
Site Location	Ebony and Company Limited concession
Field Notes	Several outcroppings found around the area although some areas Covered with soil (overburden). This area seems to have large deposit and suitable to start with for quarry. There is some development in the area.
Development Potential	Very Good Potential

OUTCROP # 02

Rock Type	Hornblende quartz-feldspathic gneiss
Rock Description	This is fine-medium grained, equigranular, and dark grey outcrops. Joints are widely spaced and very large rock blocks could be quarried from this site. Exposed surfaces are dark gray and show only slight weathering. Continuation of the same mass crop out in NW and SE of the area. A weak schistocity (direction of easy breaking), is vertical and trends in NW. Specimens which break along the schistocity show brilliant reflection from sub-aligned minerals This granitic rock is resistant; and attractively it should be suitable for use in aggregates.
Site Location	Ebony and Company Limited concession
Field Notes	The sample from this deposit were crushed and crambled and does appear to be good quality.
Development Potential	Good Potential

OUTCROP # 03

Rock Type	Hornblende gneiss
Rock Description	This is medium grained, equigranular, and dark grey outcrops. Among the outcrop areas visited, two sites were considered suitable for the crushing based on the silica contents content. Under the microscope, a thin section of this sample shows that microcline forms at least 5% of the rock, quartz 30%, and oligoclase 5%. Biotite, muscovite, sphene and carbonate are also present.
Site Location	Ebony and Company Limited concession
Field Notes	Several outcroppings found around the area although some areas Covered with soil (overburden). This area seems to have large deposit and suitable to start with for quarry. There is some development in the area.
Development Potential	Good Potential

APPENDIX B - Glossary of Stone Terms

(From the Stone World 1998 Buyers Guide, pp. 77-106)

A

ABRASIVE FINISH - a flat non-reflective surface finish for marble.

ABUTMENT - a solid stone "Springer" at the lowest point of an arch or vault.

ADHERED - veneer secured and supported through adhesion to an approved bonding material applied over an approved backing

AGATE - a variegated variety of quartz showing coloured bands or other markings (Clouded, moss-like, etc.).

ANCHORS - types for stonework include those made of flat stock (strap, cramps, dovetails, dowel, strap and dowel, and two-way anchors) and round stock (rod cramp, rod anchor, eyebolt and dowel, flat-hood wall tie and dowel, dowel and wire toggle bolts).

ARCH - a curved stone structure resting on supports at both extremities used to sustain weight, to bridge or roof an open space.

ARCHITRAVE - the member of an entablature resting on the capitals of columns and supporting the frieze.

ARGILLITE - a compact sedimentary rock composed mainly of clay and aluminum silicate minerals

ARKOSE - a sandstone containing 10% or more clastic grains of feldspar. Also called arkosic sandstone, feldspathic sandstone.

ARRIS - a natural or applied line on the stone from which all leveling and plumbing is measured.

ASHLAR - masonry having a face of square or rectangular stones, either smooth or textured.

B

BACK ARCH - a concealed arch carrying the backing of a wall where the exterior facing is carried by a lintel.

BALUSTER - a miniature pillar or column supporting a rail, used in balustrades.

BASALT - a dense-textured (aphanitic) igneous rock relatively high in iron and magnesia minerals and relatively low in silica, generally dark grey to black, and feldspathic; a general term in contradistinction to felsite, a light-coloured feldspathic and highly siliceous rock of similar texture and origin.

BED - the top or bottom of a joint, natural bed; surface of stone parallel to its stratification

BED - (1) in granites and marbles, a layer or sheet of the rock mass that is horizontal, commonly curved and lenticular, as developed by fractures. Sometimes applied also to the surface of parting between sheets. (2) In stratified rocks the unit layer formed by sedimentation; of variable thickness, and commonly tilted or distorted by subsequent deformation; generally develops a rock cleavage, parting, or jointing along the planes of stratification.

BELT COURSE - a continuous horizontal course of flat stones placed in line marking a division in the wall plane.

BEVEL - when the angle between two sides is greater or less than a right angle.

BLUESTONE - a dense, hard, fine-grained, commonly feldspathic sandstone or siltstone of medium to dark or bluish-grey colour that splits readily along original bedding planes to form thin slabs. Bluestone is not a technical geological term. It is considered to be a variety of flagstone, the thin relatively smooth-surfaced slabs being suitable for use as flagging. The term has been applied particularly to sandstones of Devonian age that are being or have been quarried in eastern New York and Pennsylvania and in western New Jersey, but similar stones that occur elsewhere may be included. It has also been applied in places to thinly-layered gneisses and schists that can be slit and used as flagging, but such stones are not properly embraced by this definition, although they may be marketed properly as flagstone.

BOND STONE - used in varying percentages to anchor or bond the stone veneer to the backing material. Bond stones are generally cut twice the bed thickness of the material being used.

BORDER STONE - usually a flat stone used as an edging material. A border stone is generally used to retain the field of the terrace or platform.

BOX - a tapered metal box wedged in the top of columns or other heavy stones for hoisting

BROACH - to drill or cut out material left between closely spaced drill holes; a mason's sharp-pointed chisel for dressing stone; an inclined piece of masonry filling the triangular space between the base of an octagonal spire and the top of a square tower; a type of chisel used for working narrow surfaces.

BROWNSTONE - a sandstone of characteristic brown or reddish-brown color that is due to a prominent amount of iron-oxide, as interstitial material.

BRUSHED FINISH - Obtained by brushing the stone with a coarse rotary-type wire brush.

BUILDING STONE, NATURAL - rock material in its natural state of composition and aggregation as it exists in the quarry and is usable in construction as dimension building stone.

BULL NOSE - convex rounding of a stone member, such as a stair tread.

CALCARENITE - limestone composed predominately of clastic sand-size grains of calcite, or rarely aragonite, usually as fragments of shells or other skeletal structures. Some calcarenites contain oolites (small, spherical grains of calcium carbonate that resemble roe) and may be termed oolitic limestone. Calcareous sandstones, in which the calcium carbonate is present chiefly as bonding material, are not included in this category.

CALCITE LIMESTONE - a limestone containing not more than 5% of magnesium carbonate.

CALCITE STREAKS - description of a white or milky-like streak occurring in stone. It is a joint plane usually wider than glass seam and has been re-cemented by deposition of calcite in the crack and is structurally sound.

CANOPY - a sheltering roof, as over a niche or a doorway.

CAPITAL - the culminating stone at the top of a column or pilaster, often richly carved.

CARVE - shaping, by cutting a design to form the trade of a sculptor.

CAULKING - making a marble joint tight or leak-proof by sealing with an elastic adhesive compound.

CAVITY VENT - an opening in joints or masonry to allow the passage of air and moisture from the wall cavity to the exterior.

CEMENT PUTTY - a thick, creamy mixture made with pure cement and water which is used to strengthen the bond between the stone and the setting bed. Also called cement butter, cement cream.

CHAMFER-to bevel the junction of an exterior angle.

CHAT-SAW FINISH - a rough gang saw finish produced by sawing with coarse chat.

CLADDING - non-load bearing stone used as the facing material in wall construction that contains other materials.

CLEAVAGE - the ability of a rock mass to break along natural surfaces; a surface of natural parting.

CLEAVAGE PLANE - plane or planes along which a stone may likely break or delaminate

COATING - a protective or decorative covering applied to the surface or impregnated into stone for such purposes as waterproofing, enhancing resistance to weathering, wear, and chemical action, or improving appearance of the stone.

COBBLESTONE - a natural rounded stone, large enough for use in paving; commonly used to describe paving blocks, usually granite, generally cut to rectangular shapes.

COMMERCIAL MARBLE - a crystalline rock composed predominantly of calcite dolomite and/or serpentine, and capable of taking a polish.

COMPOSITE - a construction unit in which stone that is to be exposed in the final use is permanently bonded or joined to other material, which may be stone or manufactured material, that will be concealed.

CONTRACTION JOINTS - spaces where panels are joined and which expand as the panels contract.

CONTROL JOINT - provision for the dimensional change of different parts of a structure due to shrinkage, expansion, temperature variation or other causes so as to avoid the development of high stresses.

COPING - a flat stone used as a cap on freestanding walls.

COQUINA - a limestone composed predominantly of unaltered shells or fragments of shells loosely cemented by calcite, generally very coarse-textured with a high porosity. The term has been applies principally to a very porous shell rock of Eocene age that has been quarried in Florida.

CORBEL PLATES - plates of non-ferrous metal fixed into a structure to support stone cladding at intervals and over openings in such a way as not to be visible.

CORNERSTONE - a stone forming a part of a corner or angle in a wall. Also a stone laid at the formal inauguration of the erection of a building, not necessarily at a corner, usually incorporating a date or inscription.

CORNICE - a molded projecting stone at the top of an entablature.

COURSE - a horizontal range of stone units the length of the wall.

COURSED VENEER - this is achieved by using stones of the same or approximately the same heights. Horizontal joints run the entire length of the veneered area. Vertical joints are constantly broken so that no two joints will be over one another.

CRACK - a break, split, fracture, fissure, separation, cleavage, or elongated narrow opening, however caused, visible without magnification to the human eye and extending from the surface into the stone, that must extend through the grain or matrix.

CROSS-BEDDING - the arrangement of laminations of strata transverse or oblique to the main planes of stratification.

CROWFOOT (STYOLITE) - description of a dark grey to black zigzag marking occurring in stone. Usually structurally sound.

CRYSTALLINE LIMESTONE - a limestone, either calcitic or dolomitic, composed of interlocking crystalline grains of the constituent minerals and of phaneritic texture; commonly used synonymously with marble and thus representing a recrystallized limestone; improperly applied to limestones that display some obviously crystalline grains in a fine-grained mass but which are not of interlocking texture and do not compose the entire mass. (NOTE: All limestones are microscopically, or in part

megascopically, crystalline; the term is thus confusing but should be restricted to stones that are completely crystalline and of megascopic and interlocking texture and that may be classed as marbles.)

CURBING - slabs and blocks of stone bordering streets, walks, etc.

CUT STONE - stone fabricated to specific dimensions.

CUTTING STOCK - a term used to describe slabs of varying size, finish, and thickness which are used in fabricating treads, risers, copings, borders, sills, stools, hearths, mantels, and other special purpose stones.

D

DACITE - a fine-grained, extrusive (volcanic) rock, intermediate in color and composition between basalt and rhyolite.

DAMP-PROOFING - one or more coatings of a compound that is impervious to water applied to a surface above grade.

DEFECT - those features which affect or have the potential of affecting the structural soundness of building stone, or may affect the durability of the building stone. Sometimes used for visual features such as xenoliths or veins.

DENTIL - block projections on an entablature.

DENTIL COURSE - the lower part of the cornice with dentils. The cornice is jointed to allow machine production of the dentils.

DENTILS - small, rectangular blocks under a classical cornice, resembling a row or teeth.

DIMENSION STONE - natural building stone that has been selected, trimmed or cut to specified or indicated shapes or sizes with or without one or more mechanically dressed surfaces.

DOLOMITIC LIMESTONE - a limestone rich in magnesium carbonate, frequently somewhat crystalline in character, found in ledge formations in a wide variety of color tones and textures. Generally speaking, its crushing and tensile strengths are greater than the oolitic limestones and its appearance shows greater variety in texture.

DOWEL - a short piece of non-ferrous metal or slate fixed into a mortice or sinking in the joints of adjoining stones to prevent movement.

DRESSED OR HAND-DRESSED - the cutting of rough chunks of stone by hand to create a square or rectangular shape. A stone which is sold as dressed stone generally refers to stone ready for installation. Sometimes called scrabbling.

DRIP - a recess cut under a sill or projecting stone to throw off water, preventing it from running down the face of the wall or other surface, such as a window or door.

DRIPSTONE - a projecting moulding over the heads of doorways, windows and archways to throw off the rain. Also known as a "hood mould" and , when rectangular, as a "label".

DRY - Open or unhealed joint planes not filled with calcite and not structurally sound.

DRY WALL - a dry wall is a stone wall that is constructed one stone upon the other without the use of any other mortar. Generally used for retaining walls.

DURABILITY - the measure of the ability of natural building stone to endure and to maintain its essential and distinctive characteristics of strength, resistance to decay, and appearance, with relation to a specific manner, purpose, and environment of use.

E

EFFLORESCENCE - a crystalline deposit appearing on stone surfaces typically caused by soluble salts carried through or onto the stone by moisture, which has sometimes been found to come from brick, tile, concrete blocks, cement, mortar, concrete, and similar materials in the wall or above.

ENTABLATURE - in classical architecture, the upper part of an order, comprising architrave, frieze, and cornice.

ENTASIS - the curve of the upper two-thirds of a column.

EXPANSION BOLT - a socket that grips a drilled hole in stone by expanding as the bolt is screwed into it.

EXPANSION-CONTRACTION JOINT - a joint between marble units designed to expand or contract with temperature changes. An expansion joint compresses as panels expand.

EXPOSED AGGREGATE - phrase applied to the larger pieces of stone aggregate purposefully exposed for their colour and texture in a cast slab.

F

FACE - this refers to the exposed portion of stone. The word "face" can also be sued when referring to the edge treatment on various cutting stock materials.

FASCIA - a horizontal belt or vertical face; often used in combination with mouldings.

FERRUGINOUS - limestone or sandstone containing a high proportion of iron oxide.

FIELD STONE - loose blocks separated from ledges by natural processes and scattered through or upon the regolith ("soil") cover; applied also to similar transported materials, such as glacial boulders and cobbles.

FILLING - a trade expression used in the fabrication of marble to indicate the filling of natural voids with cements, shellac or synthetic resins and similar materials.

FINES - the powder, dust, silt-size and sand-size material resulting from processing (usually crushing) rock.

FINISH - final surface applied to the face of stone during fabrication.

FINISHED STONE - building stone with one or more mechanically dressed surface(s).

FIREPROOF - relatively incombustible.

FLAGSTONE - thin slabs of stone used for flagging or paving walks, driveways, patios, etc. It is generally fine-grained sandstone, bluestone, quartzite or slate, but thin slabs of other stones may be used.

FLEURI CUT - cutting quarried marble or stone parallel to the natural bedding plane.

FLOORING - stone used as an interior pedestrian wearing surface.

FRACTURE - a break in rock produced by mechanical failure. Fractures include faults and joints.

FREESTONE - a stone that may be cut freely in any direction without fracture or splitting.

FRIEZE - a belt course, sometimes decorated with sculpture relief, occurring just under a cornice.

G

GANGSAWED - description of the granular surface of stone resulting from gangs awing alone.

GAUGED OR GAUGING - a grinding process to make all pieces of material to be used together the same thickness.

GLASS SEAM - description of a narrow glass-like streak occurring in stone; a joint plane that has been re-cemented by deposition of translucent calcite in the crack and structurally sound.

GRADE COURSE - beginning course at the grade level, generally waterproofed with a damp check or damp course.

GRAIN - the easiest cleavage direction in a stone. "With the grain" same as "natural bed." Also, particles (crystals, sand grains, etc.) of a rock.

GRANITE - a fine to coarse-grained, igneous rock formed by volcanic action consisting of quartz, feldspar, and mica, with accessory minerals. Granite-type rocks include those of similar texture and origin.

GRANITE (SCIENTIFIC DEFINITION) - a visibly granular, crystalline rock of predominantly interlocking texture, composed essentially of alkalic feldspars and quartz; this is true granite. Feldspar is generally present in excess of quartz, and accessory minerals (chiefly micas, hornblende, or more rarely pyroxene) are commonly present. The alkalic feldspars may be present (1) as individual mineral species, (2) as isomorphous or mechanical intergrowths with each other, or (3) as chemical intergrowths with the lime feldspar molecule, but 80 + 3 per cent of the feldspar must be composed of the potash or soda feldspar molecules.

GRANITE (COMMERCIAL/BUILDING USE) - a term that includes granite (as defined above), gneiss, gneissic granite, granite gneiss, and the rock species known to petrologists as syenite, monzonite, and granodiorite, species intermediate between them, the gneissic varieties and gneisses of corresponding mineralogic compositions and the corresponding varieties of porphyritic textures. The term commercial granite shall also include other feldspathic crystalline rocks of similar textures, containing minor amounts of accessory minerals, used for special decorative purpose, and known to petrologists as anorthosite and laurvikite.

GRANITE GNEISS - a foliated crystalline rock composed essentially of silicate minerals with interlocking and visibly granular texture, and in which the foliation is due primarily to alternating layers, regular or irregular, of contrasting mineralogic composition. In general, a gneiss is characterized by relatively thick layers as compared with a schist. According to their mineralogic compositions, gneisses may correspond to other rocks of crystalline, visibly granular, interlocking texture, such as those included under the definition of commercial granite, and may then be known as granite gneiss if strongly foliated, or gneissic granite if weakly foliated.

-BLACK GRANITE - rock species known to petrologists as diabase, diorite, gabbro, and intermediate varieties are sometimes quarried as building stone, chiefly for ornamental use, and sold as "black granite." As dimension blocks or slabs, they are valued specifically for their dark grey to black colour when polished. Scientifically, they are far removed in composition from true granites though they may be satisfactorily used for some of the purposes to which commercial granites are adapted. They possess an interlocking crystalline texture, but unlike granites, they contain little or no quartz or alkalic feldspar, and are characterized by an abundance of one or more of the common black rock-forming minerals (chiefly pyroxenes, hornblende, and biotite).

GRANULAR - having a texture characterized by particles that are apparent to the unaided eye. For sedimentary rocks: particles less than 4 inches (10 mm) in diameter and approximately equal in size.

GREENSTONE - includes stones that have been metamorphosed or otherwise changed so that they have assumed a distinctive greenish colour owing to the presence of one or more of the following

minerals: chlorite, epidote, or actinolite. Greenstone is an old field term applied to metamorphosed igneous rock of mafic of ultramafic (low silica) composition (i.e., basalt, diabase, gabbro, peridotite, and serpentinite). Greenstone derived from basalt and other dark volcanic rocks consists dominantly of epidote, actinolite and plagioclase. No present commercial production of such rocks is known. Peridotite consists dominantly of olivine and pyroxene. Serpentinite consists largely or talc, chlorite, and serpentine; further alteration may result in soapstone.

GROUT - mortar of pouring consistency. Coarse grout, used for wide grout spaces 2 inches (5 cm) or more, consists of one part portland cement, not more than two to three parts sand, and not more than two parts pea gravel. Fine grout, used in narrow grout spaces, consists of one part portland cement and two-and -one quarter to three parts sand.

H

HAND-CUT RANDOM RECTANGULAR ASHLAR - a pattern where all the stone is hand cut into squares and rectangulars. Joints are fairly consistent. Similar to sawed-bed ashlar in appearance.

HAND OR MACHINE PITCH-FACED (ROCK-FACED) ASHLAR - a finish given to both veneer stone and cutting stock. This is created by establishing a straight line back from the irregular face of the stone. Proper tools are then used to cut along the line, leaving a straight arris and the intended rustic finish on the face.

HEAD - the end of a stone which has been tooled to match the face of the stone. Heads are used at outside corners, windows, door jambs, or any place where the veneering will be visible from the side.

HEARTH - that part of the floor of a fireplace of stone on which the fire is laid.

HEARTH STONE - originally the single large stone or stones used for the hearth, now most commonly used to describe the stone in front of the fire chamber and many times extending on either or both sides of the front of the fire chamber.

HOLES - sinkages in the top beds of stones to engage Lewis pins for hoisting.

HONED FINISH - honed is a super fine smooth finish, though not as fine as a polished finish.

I

IGNEOUS - one of the three great classes of rock (igneous, sedimentary, and metamorphic), solidified from molten state, as granite and lavas. INCISE - to cut inwardly or engrave, as in an inscription.

INSCRIPTION - lettering cut in stone.

J

JACK ARCH - one having horizontal or nearly horizontal upper and lower surfaces. Also called flat or straight arch.

JOINT - the space between stone units, usually filled with mortar.

JOINTING SCHEME - architects drawing detailing dimensions, location and configuration of marble units and joints as related to the structure.

JUMPER - in ashlar patterns, a piece of stone of higher rise than adjacent stones which is used to end a horizontal mortar joint at the point where it is set.

K

KEYSTONE - the last wedge-shaped stone placed in the crown of an arch regarded as binding the whole.

L

LAVA - a general term applied to igneous rocks, such as basalt and rhyolite, that erupted from the earth by volcanic action.

LEAD BUTTONS - lead spacers in the solid horizontal joints to support the top stones until the mortar has set.

LEWIS HOLES - holes in cut stones for lifting and support during setting of cut stones and sometimes for permanent support. Holes are checked for the particular Lewis lifting device or hook to be used.

LIMESTONE - a sedimentary rock composed of calcium carbonate; includes many varieties. (See oolitic limestone, dolomitic limestone, crystalline limestone.) Limestones that contain no more than 5% magnesium carbonate may be termed calcite limestone, as distinguished from those that contain between 5 and 40% magnesium carbonate (magnesium or dolomitic limestone), and from those that contain in excess of 40% as the mineral dolomite (dolostone, formerly known as the rock dolomite). Recrystallized limestones and compact, dense, relatively pure microcrystalline varieties that are capable of taking a polish are included in commercial marbles.

LINERS - structurally sound sections of marble which are cemented to the back of marble veneer slabs to give greater strength, additional bearing surface, or to increase joint depth.

LINTEL - the block of stone spanning the top of an opening such as a doorway or window; sometimes called a head.

LIPPING - usually refers to flagging materials; caused when two pieces of material to be joined together are slightly warped or twisted causing one of more edges to be higher or lower than the adjoining material.

LUG SILL - a stone sill set into the jambs on each side of masonry opening.

M

MACHINE FINISH - the generally recognized standard machine finish produced by the planers.

MALPAIS - literally, bad land; refers to dark coloured rock, commonly lava, in rough terrain. As defined for architectural use: calcium carbonate with other components which give it colour, markings, and texture suitable as a desirable building stone.

MARBLE (SCIENTIFIC DEFINITION) - a metamorphic (recrystallized) limestone composed predominantly of crystalline grains of calcite or dolomite, or both, having interlocking or mosaic texture. Marble that contains less than 5% magnesium carbonate may be termed calcite marble; from 5-40% magnesium carbonate, magnesian or dolomitic marble; and more than 40%, dolomite marble. These limiting values are, however, not strictly established in petrologic science and are used herein as arbitrary limits.

ONYX - so called in trade, is a crystalline form, commonly microcrystalline, of calcium carbonate deposited usually from cold-water solutions. It is generally translucent and shows a characteristic layering. The term onyx marble is technically a misnomer, as true onyx is a variety of cryptocrystalline fibrous silica (chalcedony), and is closely related in form and origin to agate.

SERPENTINE - marble characterized by a prominent amount of the mineral serpentine.

TRAVERTINE - a form of limestone precipitated from ground waters, as in caves or in orifices of springs (sees limestone).

VERDE ANTIQUE - a commercial marble composed chiefly of massive serpentine and capable of taking a high degree of polish. Verde antique is not a true marble in the scientific sense, but is commonly sold as a decorative commercial marble and requires the adjectival modifier verde (or verd) antique. Verde antique is commonly veined with carbonate minerals, chiefly calcite and dolomite.

MASONRY - built up construction, usually of a combination of materials set in mortar.

METAMORPHISM - the change or alteration in a rock caused by exterior agencies, such as deep-seated heat and pressure, or intrusion of rock materials.

MITER - the junction of two units at an angle of which the junction lines usually bisect on a 45 degree angle.

MODULAR MULTIPLE-CUT (PATTERN-CUT) - this refers to standard patterns used throughout the stone industry. These patterns are usually based on multiples of a given height. Stone that is multiple cut or pattern cut is pre-cut to allow typically for 1/4 or 1/2 inch (6 or 13 mm) joints or beds.

MOLDINGS - decorative stone deviating from a plane surface by projections, curved profiles, recesses or any combination thereof.

MORTAR - a plastic mixture of cement, lime, sand and water used to bond masonry units.

MOSAIC - a veneering which is generally irregular with no definite pattern. Nearly all the stone used in a mosaic pattern is irregular in shape.

N

NATURAL BED - the setting of the stone on the same plane as it was formed in the ground. This generally applies to all stratified materials.

NATURAL CLEFT - this generally pertains to stones which are formed in layers in the ground. When such stones are cleaved or separated along a natural seam the remaining surface is referred to as a natural cleft surface.

NICKED BIT FINISH - obtained by planning the stone with a planer tool in which irregular nicks have been made in the cutting edge.

NON-STAINING MORTAR - mortar composed of materials which individually or collectively do not contain material that will stain, usually haven very low alkali content.

O

OBSIDIAN - a glassy phase of lava.

ONYX MARBLE - a dense, crystalline form of lime carbonate deposited usually from cold-water solutions. Generally translucent and showing a characteristic layering due to mode of accumulation.

OOLITIC LIMESTONE - a calcite-cemented calcareous stone formed of shells and shell fragments, practically non-crystalline in character. It possesses a high internal elasticity, adapting itself without damage to extreme temperature changes.

OPALIZED - the introduction into a rock of siliceous material in the form of opal, hydrous silicate.

OUT OF WIND - to be out of wind is to have the arris of the stone not in parallel or perpendicular lines. Stone which is out of wind has an irregular or rustic appearance.

P

PALLETIZED - a system of stacking stone on wooden pallets. Stone which comes palletized is easily moved and transported by modern handling equipment. Palletized stone generally arrives at the job site in better condition than unpalletized material.

PANEL - a finished stone unit used on walls.

PARAPET WALL - that part of any wall entirely above the roof line.

PARGING - damp-proofing by placing a coat of 1/2 inch (13 mm) setting mortar to the back of stones or the face of the back-up material.

PARQUETRY - an inlay of stone floors in geometrical or other patterns.

PAVING - stone used as an exterior wearing surface, as in patios, walkways, driveways, etc. (see flooring).

PERFORATED WALL - one which contains a considerable number of relatively small openings, often called pierced wall or screen wall.

PERRONS - slabs of stone set on other stones serving as steps and arches in gardens.

PHENOCRYST - in igneous rocks, the relatively large and conspicuous crystals in a finer-grained matrix or ground mass.

PILASTER - an engaged pier of shallow depth. In classical architecture, it follows the height and width of related columns, with similar base and cap.

PITCHED STONE - stone having arris clearly defined; face, however, is roughly cut with pitching chisel used along the line which becomes the arris.

PLINTHS - the lower square part of the base of a column. A square base or a lower block, as of a pedestal. The base blocks to the juncture or baseboard and trim around an opening.

PLUCKED FINISH - obtained by rough-planning the surface of stone, breaking or plucking out small particles to give rough texture.

POINTING - the final filling and finishing of mortar joints that have been raked out.

POLISHED FINISH - the finest and smoothest finish available in stone characterized by a high luster (gloss) and strong reflection of incident light, generally only possible on hard, dense materials.

PORPHYRY - an igneous rock in which relatively large and conspicuous crystal (phenocrysts) are set in a matrix of finer crystals.

PRESSURE RELIEVING JOINT - an open horizontal joint below the supporting angle or hanger located at approximately every floor line and not over 15 feet (4.6 m) apart horizontally and every 20 to 30 feet (6 to 9 m) vertically to prevent the weight from being transmitted to the masonry below. These joints are to be caulked with a resilient non-staining material to prevent moisture penetration.

PROCESSING - the work involved in transforming building stone from quarry blocks to cut or finished stone. This includes primary sawing into slabs. It may also include both hand and mechanical techniques such as sawing, drilling, grinding, honing, polishing, and carving.

PROJECTIONS - this refers to the pulling out of stones in a wall to give an effect of ruggedness. The amount each stone is pulled out can vary between 1/2 and 1-1/2 inches (1.3 to 3.8 cm). Stones are either pulled out at the same degree at both ends or sometimes one end is pulled out, leaving the other end flush with the majority of the veneer.

PUMICE - exceptionally cellular, glassy lava resembling a solid froth.

Q

QUARRY - the location of an operation where a natural deposit of stone is removed from the ground.

QUARTZ - a silicon dioxide mineral that occurs in colourless and transparent or coloured hexagonal crystal and also in crystalline masses. One of the most common minerals, the chief constituent of sandstone.

QUARTZITE - a compact granular rock composed of quartz crystals, usually so firmly cemented as to make the mass homogenous. The stone is generally quarried in stratified layers, the surfaces of which are unusually smooth. Its crushing and tensile strengths are extremely high; the color range is wide.

QUARTZITIC SANDSTONE - sandstone with a high concentration of quartz grains and siliceous cement.

QUIRT - a groove separating a bed or other moulding from the adjoining members.

QUOINS - stones at the corner of a wall emphasized by size, projection, rustification, or by a different finish.

R

RANGE - a course of any thickness that is continued across the entire face. All range courses need not be of the same thickness.

RECESS - a sinkage in a wall plane.

REGLET - a narrow, flat moulding of rectangular profile.

RELIEF OR RELIEVE - ornament in relief. The ornament or figure can be slightly, half, or greatly projected.

RELIEVING ARCH - one built over a lintel, flat arch or smaller arch to divert loads, thus relieving the lower member from excessive loading. Also known as discharging or safety arch.

RETURN - the right angle turn of a moulding.

RETURN HEAD - stone facing with the finish appearing on both the face and the edge of the same stone, as on the corner of a building.

REVEAL - the depth of stone between its outer face and a window or door set in an opening.

RIBBON - narrow bands of rock differing to various degrees in chemical composition and colour from the main body of the slate or stone; in other words, bands.

RIFT - the most pronounced (see "grain") direction of splitting or cleavage of stone. Rift and grain may be obscure, as in some granites, but are important in both quarrying and processing stone.

RIP RAP - irregularly shaped stones used for facing bridge abutments and fills; stones thrown together without order to form a foundation or sustaining walls.

RISE - the heights of stones, generally used in reference to veneer stone.

ROCK - an integral part of the earth's crust composed of an aggregate of grains of one or more minerals. (Stone is the commercial term applied to quarry products.)

ROCK (PITCH) FACE - similar to split face, except that the face of the stone is pitched to a given line and plane producing a bold appearance rather than the comparatively straight face obtained in split face.

RODDING - reinforcement of a structurally unsound marble by cementing reinforcing rods into grooves or channels cut into the back of the slab.

ROMAN ARCH - semi-circular arch.

ROSE WINDOW - a circular stone window fitted with carved tracery.

ROUGH SAWN - a marble surface finish accomplished by the gangs awing process.

RUBBED FINISH - mechanically rubbed for smoother finish.

RUBBLE - a product term applied to dimension stone used for building purposes chiefly walls and foundations, and consisting of irregularly shaped pieces, partly trimmed or squared, generally with one split or finished face, and selected and specified with a size range.

RUSTICATION - chamfers or square sinkings round the face edges of individual stone to create shadows and to give an appearance of greater weight to the lower part of the building. When only the horizontal joints are sunk, the device is known as banded rustication.

S

SADDLE - a flat strip of stone projecting above the floor between the jambs of the door; a threshold.

SANDBLASTED - a matte-texture marble surface finish with no gloss, accomplished by exposing the surface to a steady flow of sand under pressure.

SAND-SEWN FINISH - the surface lift as the stone comes from the gang saw; moderately smooth, granular surface varying with the texture and grade of the stone.

SANDSTONE - a sedimentary rock consisting usually of quartz, cemented with silica, iron oxide or calcium carbonate. Sandstone is durable, has a very high crushing and tensile strength and a wide range of colour and textures. Varieties of sandstone are commonly designated by the kind and prominence of interstitial and bonding materials, as siliceous sandstone (bonding material primarily silica), calcareous sandstone (calcium carbonate prominent as bonding material or as accessory grains or both), argillaceous sandstone (clay minerals prominent as interstitial or bonding materials, or as thin laminac), ferringous sandstone (iron oxide or hydroxide minerals [hematic, limonite, et al] as interstitial or as bonding materials in sufficient amount to impart appreciable color to the stone); brownstone (ferringous sandstone of dark brown or reddish brown colour), arkose, arkosic sandstone, or feldspathic sandstone (a sandstone that contains an abundance of grains of feldspar), conglomerate (a sandstone composed in large part of rounded pebbles, also called puddingstone). The term "brownstone" was applied originally to certain Triassic sandstones of the Connecticut Valley in Massachusetts (Longmeadow sandstone).

SAWED EDGE - a clean cut edge generally achieved by cutting with a diamond blade, gangsaw or wire saw.

SAWED FACE - a finish obtained from the process used in producing building stone; varies in texture from smooth to rough and coincident with the type of materials used in sawing; characterized as diamond sawn, sand sawn, chat sawn and shot sawn.

SCALE - thin lamina or paper-like sheets of rock, often loose, and interrupting an otherwise smooth surface on the stone.

SCHIST - a loose term applying to foliated metamorphic (recrystallized) rock characterized by thin foliae that are composed predominantly of minerals of thin platy or prismatic habits and whose long dimensions are oriented in approximately parallel positions along the planes of foliation. Because of this foliated structure, schists split readily along these planes and so possess a pronounced rock cleavage. The more common schists are composed of the micas and other mica-like minerals (such as chlorite) and generally contain subordinate quartz and/or feldspar of comparatively fine-grained texture; all graduations exist between schist and gneiss (coarsely foliated feldspathic rocks).

SCORIA - irregular masses of lava resembling clinker of slag; may be cellular (vesicular), dark-coloured and heavy.

SCOTIA - a concave moulding.

SCULPTURE - the work of a sculptor in three-dimensional form by cutting from a solid block of stone.

SEMI-RUBBED - a finish achieved by rubbing (by hand or machine) the rough or high spots off the surface to be used, leaving a certain amount of the natural surface along with the smoothed areas.

SERPENTINE - a hydrous magnesium silicate of igneous origin, generally a very dark green colour with makings of white, light green or black. One of the hardest varieties of natural building stone.

SETTING SPACE - a term used to indicate the distance from the finished face of the marble to the face of the back-up wall.

SHAPED STONE - cut stone which has been carved, ground or otherwise processed.

SHEAR - a type of stress; a body is in shear when it is subjected to a pair of equal forces which are opposite in direction and which act along parallel planes.

SHOT-SAWN - description of a finish obtained by using steel shot in the gang sawing process to produce random markings for a rough surface texture.

SHOT-SAWN FINISH - a rough gang saw finish produced by sawing with chilled steel shots.

SILL - a flat stone used under windows, doors, and other masonry openings.

SILTSTONE - a fine-grained non-carbonate clastic rock composed of at least 67% of detrital grains of quartz and silicate minerals of silt size. Siltstones are rarely marketed as such but commonly are considered as fine-grained sandstones. This class of sediments is texturally transitional between sandstones and shales (mudstones). Many bluestones and siliceous flagstones fall within this category. The term is included in these definitions chiefly to explain the relationship of some silicious flagstones to the sandstone category.

SLAB - a lengthwise cut of a large quarry block of stone produced by sawing or splitting in the first milling or quarrying operation. A slab has two parallel surfaces.

SLATE - a very fine-grained metamorphic rock derived from sedimentary rock shale. Characterized by an excellent parallel cleavage entirely independent of original bedding, by which cleavage the rock may be split easily into relatively thin slabs. Essential mineral constituents of slates are usually members of the mica group, commonly sericite, muscovite, and paragonite; of the clay group, chiefly illite and kaolinite; and of the chlorite group. Common accessory minerals are iron oxides, calcite, quartz, and feldspar. Other minerals may be present also as minor accessories. Most slates are derived from shales. Others are derived from fine-grained igneous rock, chiefly volcanic tuffs, but these are rare and of little commercial importance.

SLIP SILL - a stone sill set between jambs (see lug sill).

SMOOTH FINISH - description of the finish produced by planer machines plus the removal of objectionable tool marks. Also known as "smooth planer finish" and "smooth machine finish."

SNAPPED EDGE, QUARRY CUT OR BROKEN EDGE - a natural breaking of a stone either by hand or machine. The break should be at right angles to the top and bottom surfaces.

SOAPSTONE - a massive variety of talc with a soapy or greasy feel used for hearths, washtubs, table tops, carved ornaments, chemical laboratory counters, etc., and known for its stain-proof qualities.

SOFFIT - the finished, exposed underside of a lintel, arch or portico.

SOUND STONE - stone which is free of cracks, fissures, or other physical defects?

SPALLS - sized may vary from chip-size to one- and two-man stones. Spalls are primarily used for taking up large voids in rough rubble or mosaic patterns.

SPANDREL WALL - that part of a curtain wall above the top of a window in one story and below the sill of the window in the story above.

SPLAY - a bevelled or slanted surface.

SPLINE - a thin strip of material, such as wood or metal, inserted into the edges of two stone pieces or stone tiles to make a butt joint between them.

SPLIT - division of a rock by cleavage.

SPLIT FACE STONE - stone on which the face has been broken to an approximate plane.

SPLITSTONE FINISH - obtained by sawing to accurate heights then breaking by machine to required bed widths. (Normal bed widths are 3 1/2 inches [90 mm]).

SPOT OR SPOTTING - an adhesive contact, usually of plaster of paris, applied between the back of marble veneer and the face of the back-up wall to plumb or secure standing marble.

STACKED BOND - stone that is cut to one dimension and installed with unbroken vertical and horizontal joints running the entire length and height of the veneered area.

START a small fissure.

STATUE - a sculpture or a human or animal figure.

STICKING - an expression used in the marble finishing trade to describe the process of cementing together of broken slabs or pieces of marble.

STONE - sometimes synonymous with rock, but more properly applied to individual blocks, masses or fragments taken from their original formation or considered for commercial use.

STOOL - a flat stone, generally polished, used as an interior sill.

STRATIFICATION - a structure produced by deposition of sediments in beds or layers (strata), laminae, lenses, wedges, and other essentially tabular units.

STRIP RUBBLE - generally speaking, strip rubble comes from a ledge quarry, the beds of the stone, while uniformly straight, are of the natural cleft as the stone is removed from the ledge, and then split by machine to approximately 4-inch (100 mm) widths.

STRIPS - long pieces of stone, usually low height ashlars courses, where length to height ratio is at maximum for the material used.

STYROLITE - a longitudinally streaked, columnar structure occurring in some marbles and of the same material as the marble in which it occurs.

SURROUND - an enframement.

T

TABLET - a small, flat slab or surface of stone, especially one bearing or intended to bear an inscription, carving or the like.

TEMPLATE - a pattern for repetitive marking or fabricating operation.

TERRAZZO - a type of concrete in which chips or pieces of a stone, usually marble, are mixed with cement and are ground to a flat surface, exposing the chips, which take a high polish.

THIN MARBLE - a fabricate marble unit of 2 inches (50 mm) or less in thickness.

THIN STONE/THIN VENEER - a cladding under 2 inches (50 mm) thick.

TILE - a thin modular stone unit.

TOLERANCE - dimensional allowance made for the inability of men and machines to fabricate a product of exact dimensions.

THROAT - the name sometimes given to the small groove under the windowsill or dripstone intended to deflect rain water from the wall face.

TOOLED FINISH - customarily has four, six, or eight parallel, concave grooves to the finish.

TRACERY - ornamentation of panels, circular windows, window heads, etc.

TRANSLUCENCE - the light-emitting quality of certain marble varieties containing a crystal structure capable of transmitting light.

TRAVERTINE LIMESTONE - a variety of limestone that has a partly crystalline or microcrystalline texture and porous or cellular layered structure, the cells being usually concentrated along certain layers and commonly displaying small stalactites forms.

TRAVERTINE MARBLE - a variety of limestone regarded as a product of chemical precipitation from hot springs. Travertine is cellular with the cells usually concentrated in thin layers that display a stalactitic structure. Some that take a polish are sold as marble and may be classified as travertine marble under the class of commercial marble.

TREAD - a flat stone used as the top walking surface on steps.

TRIM - stone used as decorative items only, such as sill, coping, enfacements, etc., with the facing of another material.

TRIMMER ARCH - a stone arch, usually a low-rise arch, used for supporting a fireplace hearth.

TUFF - cemented volcanic ash, many varieties included.

U

UNDERCUT - cut so as to present an overhanging part.

V

VEIN CUT - cutting quarried marble or stone perpendicular to the natural bedding plane.

VEININGS - colour markings in limestone, marble, alabaster, etc.

VENEER -a non-load bearing facing of stone attached to a backing for the purpose of ornamentation, protection or insulation. Veneer shall support no vertical load other than its own weight and possibly the vertical dead load of veneer above.

VENEER STONE - a non-load bearing facing of stone attached to a backing for the purpose of ornamentation, protection or insulation. Veneer shall support no vertical load other than its own weight and possible the vertical dead load of veneer above.

VENTING - a method used to allow air and moisture to escape to the outside from the wall cavity (see cavity vent).

VERDE ANTIQUE - a marble composed chiefly of massive serpentine and capable of being polished. It is commonly crossed by vein lets of other minerals, chiefly carbonates of calcium and magnesium.

W

WALL PLATE - a horizontal member anchored to a masonry wall to which other structural elements may be attached. Also called "head plate." Usually steel, 3/16-inch (5 mm) in diameter and formed in a "Z" shape or a rectangle.

WALL TIE - a bonder or metal piece which connects wythes of masonry to each other or to other materials.

WALL TIE CAVITY - a rigid corrosion-resistant metal tie which bonds two Wythes of a cavity wall. It is filling of natural voids with colour-blended materials.

WALLS - one of the sides of a room or building connecting floor and ceiling or foundation and roof:

WALL BEARING - a wall supporting a vertical load in addition to its own weight.

CAVITY - a wall in which the inner and outer wythes are separated by an air space but tied together with metal ties.

WALL COMPOSITE - a wall in which the facing and backing are of different materials and bonded together with bond stones to exert a common reaction under load.

WALL VENEER OR FACE - a wall in which a thin facing and the backing are of different materials but not so bonded as to exert a common reaction under load.

WALL WIND (WINED) - a twisting warp from cutting slabs in the gang saws.

WALL WYTHE - the inner or outer part of a cavity wall.

WARPED WALLS - generally a condition experienced only in flagging or flagstone materials; very common with flagstone materials that are taken from the ground and set in their natural state. To eliminate warping in stones, it would be necessary to further finish the material by methods such as machining, sand rubbing, honing or polishing.

WASH - a sloped area or the area water will run over.

WATER BAR - typically a strip in a reglet in windowsill and stone below to prevent water passage.

WATER TABLE - a projection of lowest masonry on the outside of the wall slightly above the ground. Often a damp course is placed at the level of the water table to prevent upward penetration of ground water.

WAXING - an expression used in the marble finishing trade to indicate the filling of natural voids with colour-blended materials.

WEAR - the removal of material or impairment of surface finishing through friction or impact use.

WEATHERING - natural alteration by either chemical or mechanical processes due to the action of constituents of the atmosphere, surface waters, soil and other ground waters, or to temperature changes; the inclined to surface of a stone such as a coping, cornice, or windowsill.

WEDGING - splitting of stone by driving wedges into planes of weakness.

WIRE SAW - method of cutting stone by passing a twisted, multi-strand wire over the stone and immersing the wire in a slurry of abrasive material.

Form PA 1 Serial No. 7733 TIC N 09843

TANZANIA INVESTMENT CENTRE

REGISTRATION FORM

FOR

CERTIFICATE OF INCENTIVES

**(Tanzania Investment Act 1997, Section 17 and 18,
and the Investment Regulations:
Regulation 42, Government Notice No. 318A of 2002)**

Tanzania Investment Centre
9A & B Shaaban Robert Street
P. O. Box 938
DAR ES SALAAM
Tel. 022 2116328
Fax. 022 2118253
e-mail: information@tic.co.tz
Website: www.tic.co.tz

(Please fill the form in duplicate)


TUNISIA
ALGERIA
LIBYA
EGYPT
MAURITANIA
MALI
NIGER
CHAD
SUDAN
ETHIOPIA
ERITREA
DJIBOUTI
SOMALIA
KENYA
ZAIRE
UGANDA
TANZANIA
ANGOLA
ZAMBIA
MALAWI
MOZAMBIQUE
ZIMBABWE
NAMIBIA
BOTSWANA
SOUTH AFRICA
LESOTHO
SWAZILAND
MADAGASCAR
South Atlantic Ocean
Indian Ocean
Indian Ocean


UGANDA
D.R. CONGO
KENYA
RWANDA
BURUNDI
ZAMBIA
MALAWI
MOZAMBIQUE
D.R. CONGO
Lake Victoria
Lake Tanganyika
Lake Nyasa
INDIAN OCEAN
NAIROBI
KIGALI
BUJUMBURA
Scale 1:2,000,000
0 100 200 km
Digital Cartography by M C Shand
University of Glasgow 2007.
MARA
KAGERA
MWANZA
SHINYANGA
KIGOMA
TABORA
RUKWA
MBEYA
SINGIDA
DODOMA
IRINGA
RUVUMA
ARUSHA
KILIMANJARO
MANYARA
TANGA
PEMBA
NORTH; SOUTH
UNGUJA
NORTH; SOUTH & CENTRAL; TOWN & WEST
DAR ES SALAAM
MOROGORO
PWANI
LINDI
MTWARA

C. 1

TANZANIA

Certificate of Incorporation

No. 28806

I HEREBY CERTIFY THAT

EBONY AND COMPANY

.....Limited

is this day incorporated under the Companies Ordinance (Cap. 212) and that the Company is Limited.

Given under my hand at Dar es Salaam this 7th day of NOVEMBER

One thousand nine hundred and NINETY FIVE

True Copy Seen

JUSTIN F. KAPILIMA ADVOCATE NOTARY PUBLIC & COMMISSIONER FOR OATHS D'SALAAM

Senior Asst: .....

Registrar of Companies

G P Dsm 001126/4.95/9m

BARCLAYS

Barclays Bank Tanzania Limited
Barclays House, Ohio Street
P.O.Box 5137
Dar es Salaam
Tanzania
Tel: +255 22 2129381/ 2129758
Fax: + 255 22 2129750

8TH FEBRUARY 2012

THE EXECUTIVE DIRCETOR
TANZANIA INVESTMENT CENTRE
P.O BOX 938
DAR ES SALAAM
TANZANIA

Dear Sir/Madam,

REFERENCE: CONFIRMATION OF EBONY AND COMPANY LTD ACCOUNT NO: 001 6009768 – (TZS), 001 9002608 – (USD).

Reference is made to the above subject matter.
This letter is to confirm that Ebony Company Ltd maintains above mentioned accounts in our books since the year 2002.

The operation of both accounts is satisfactory

This information is given in strict confidence and no liability may be imposed on the Bank and on the part of any of its officials for the revelation of such.

Yours Sincerely
BARCLAYS BANK TANZANIA LIMITED

Edditrice Temba
Premier Centre Manager - Barclays Bank, Ohio Street.

(6)

THE UNITED REPUBLIC OF TANZANIA

THE LAND ACT OF 1999
(NO.4 OF 1999)
CERTIFICATE OF OCCUPANCY
(Under Section 29)

Title No.....
L.O.NO. **464154**
Ref. No: **BAG/LD/12813**

The day of Two thousand and **Eleven**.

THIS IS TO CERTIFY that **EBONY& COMPANY LIMITED** a limited liability company incorporated in Tanzania under the Companies Ordinance (Cap 212) of **P.O.BOX 4051, DAR ES SALAAM** (hereinafter called "the occupier") is entitled to a Right of Occupancy (hereinafter called the 'Right') in and over the land described in the schedule hereto (hereinafter called the 'land') for a term of **sixty six (66) years** from the first day of **October two thousand and eleven** according to the true intent and meaning of the **Land Act** and subject to the provisions thereof and to the regulations made there under and to any enactment in substitution therefore or amendment thereof and to the following conditions:

1. The occupier having paid rent up to the thirtieth day of **June, 2012** shall thereafter pay rent of Tanzania Shillings **sixteen hundred and five thousand (16500/=)** only a year in advance on the first day of July every year of the term without any deduction **PROVIDED** that the rent may be revised by the Commissioner for Lands every ten years or three years thereafter as may deem fit.
2. The Land shall be used for **Plant and Animal husbandry Use Group "R" Use classes (a) and (b)** as defined in the Town and Country Planning (use classes) Regulations 1960 as amended in 1993.

311 AT PONGWE MSUNGURA
ICT COAST REGION

41"	137·383
58"	572·050
03"	93·747
58"	253·703
58"	317·721

EA = 6·6 Ha

Certified True Copy of The Original

Signature

Tanzania Investment Centre Director

00218532

THE UNITED REPUBLIC OF TANZANIA

Certificate of Incentives

(Section 17 of the Tanzania Investment Act, 1997)

No: 042179

This is to certify that

EBONY AND COMPANY LIMITED

of address P.O. BOX 4051

DAR ES SALAAM

has been granted a Certificate of Incentives to invest in a new, rehabilitation/expansion or equity of the enterprise known as

EBONY AND COMPANY LIMITED

Which is located at FARM NO. 6311 PONGWE MSUNGURA

BAGAMOYO - COAST (PWANI)

Further particulars required by Section 17 of the Tanzania Investment Act are set out overleaf.

Ag .Executive Director

Tanzania Investment Centre
P.O. Box 938, Dar es Salaam

Dated 7TH MARCH 2012

GP.DSM

This Certificate is issued in accordance with the provisions of Section 17 of the Tanzania Investment Act, 1997 and subject to the conditions prescribed under item 14 and 15 hereafter:—

1.	Shareholders	Nationality	Shareholding (%)
	Hassan Jamal	Tanzanian	40
	Fauzia Jamal	Tanzanian	60

2. Proposed Activities : To establish stone aggregate manufacturing project

3. Sector: Manufacturing Subsector Stone aggregate

4. Investment cost: .Foreign – Local USD 2.095m. Total USD 2.095m.

5. Project Financing:
Equity USD 1.7m. Loans USD 0.75m. Total USD 2.95m.

6. Source, terms and conditions of loan

7. Assets to be invested:

Capital items:	Foreign	Local	Total
	–	USD 2.095m.	USD 2.095m.

8. Technology Agreement None

9. Date of TIC Registration: 5th March 2012

10. Implementation period March 2012 - April 2015

11. Operative date March 2015

12. Investment Incentive Grade: As defined in part III Section 19 (1), (2) and Section 20 of the Tanzania Investment Act, 1997

(i) Applicable Import Duty And VAT as per Customs Tariff Act,1976 & VAT Act,1997

(ii) Applicable with-holding Tax As per Income Tax Act,2004 (as amended)

(iii) Eligibility of Capital Allowances As per Income Tax Act,2004 (as amended)

13. Protection of Investment, Arbitration and Transfer of Foreign Currency: as defined in part III Section 21, 22 and 23 of the Act.

14. Conditions attached to this Certificate of Incentives

(i) Date of Commencement of investment has to be notified to the Centre.

(ii) Certificate not to be transferred, assigned or amended

(iii) Failure to commence implementation within two years invalidates Certificate

(iv) Failure to operate investment must be notified to the Centre

(v) Changes in shareholding, project activities and level of invested capital must be notified to the centre

15. Additional conditions attached to Certificate

Finished goods are not allowed under this Certificate

Signed
Ag. Executive Director

(4)

TANZANIA INVESTMENT CENTRE
01 MAR 2012
TANZANIA

JAMHURI YA MUUNGANO WA TANZANIA
THE UNITED REPUBLIC OF TANZANIA

TFN. 614 (Rev. 8.94)

STAKABADHI YA SERIKALI
EXCHEQUER RECEIPT

37896573 1

NIMEPOKEA KWA
Received from ERONY COMPANY LTD

KIASI *Amount*

Shs.								Cts.	
USD						7	50	=	

JUMLA YA SHILINGI (Kwa maneno)
The sum of Shillings (Words) US DOLLAR SEVEN HUNDRED FIFTY ONLY

NA SENTI
And Cents

for Executive Director
Tanzania Investment Centre

KWA MALIPO YA
In respect of CERTIFICATE OF INCENTIVES

KWA FEDHA TASLIMU/HUNDI
By Cash/Cheque No. D/D DEPOSIT 01/03/2012

KITUO — *Station* DSM.

SAHIHI YA MPOKEAJI — *Receiving Officer's Signature*

CHEO — *Title* ACC.

TAREHE — *Date* 01 MAR. 2012

01 MAR 2012

(3)

TICC/PP.10/042179/3

5th March, 2012

Managing Director,
Ebony and Company Ltd.,
P.O. Box 4051,
DAR ES SALAAM

RE: CERTIFICATE OF INCENTIVES FOR INVESTMENT IN THE ESTABLISHMENT OF STONE AGGREGATE MANUFACTURING PROJECT

We wish to acknowledge receipt of your project proposal to establish stone aggregate manufacturing project as presented in the TIC P.A. 1 Form No. 09843 and Feasibility Study with a projected investment of USD 2.095m.

We have studied your project proposal and we are pleased to inform you that your investment proposal is now officially registered and therefore your project will be granted a CERTIFICATE OF INCENTIVES, given under authority conferred upon TIC under Part III, Section 17 (1-8) of the Tanzania Investment Act, 1997.

You will be required to submit to the Centre a Progress Report on the implementation of the project after every six months for our information and review. Guidelines for the preparation of the report are contained in annexture 2 also attached to this letter. Please do not hesitate to contact the Centre for any clarification if the need arises. Please also note that a facilitation fee equivalent to US$ 750.00 is payable at the ruling exchange rate before your Certificate of Incentives is prepared. Please make deposit direct to the bank as per bank details below:-

. . ./2

TICC/PP.10/042179/3

5th March, 2012

Tanzania Investment Centre
Standard Chartered Bank (T) Ltd
US Dollar A/C 8702006002000
T.Shs A/C 0102006002000

We wish you every success in the implementation of the project.

Yours sincerely,
TANZANIA INVESTMENT CENTRE

B.D. Chonjo
For: EXECUTIVE DIRECTOR

Copy to: Permanent Secretary,
Ministry of Finance,
P. O. Box 9111,
DAR ES SALAAM

Permanent Secretary,
Ministry of Industry, Trade and Marketing,
P.O. Box 9503,
DAR ES SALAAM

Commissioner General,
Tanzania Revenue Authority,
P. O. Box 11491,
DAR ES SALAAM

TIC Evaluation Report

Name of the Company

Ebony And Company Ltd.

Post Box	Pongwe, Farm No. 6311, Bagamoyo District	**COI Number**	28806	**Contact**	Ms. Fauzia Jamal
Post Office	4051	**COI Date**	11/07/95	**Designation**	Director
Region	Coastal Region	**Application F. No**	09843	**Phone**	0
Country	Tanzania	**Status**	New	**Direct Phone**	0
		Sector	Manufacturing	**Cell Phone**	0653 47 00 78
		Sub Sector	Stone Aggregate	**Fax**	0
		File No	042179	**E-Mail Address**	0

Project Location	
t/Block	Farm No. 6311
Street	Pongwe
District	Bagamoyo
Region	Coast (Pwani)

Investment Finance Plan in Millions USD

Foreign Equity	Local Equity	Foreign Loan	Local Loan
0	1.7	0	0.75

Shareholders Detail

Name	Nationality	(%)
Hassan Jamal	Tanzanian	40
Fauzia Jamal	Tanzanian	60

Investment Breakdown (USD Million)

Land/Building	0.3
Plant	1.4
Vehicles	0.27
Furniture & Fittings	0.015
Pre-expenses	0.01
Others	0
Working Capital	0.1
Total	2.095

Employment	17	**Evaluated By**	,wf officer4
pacity	xxxxx	**Drawn By**	wf registy2
Project Turn Over		**Project Type**	Local

Description

To establish stone aggregate manufacturing project

Recomendations

Be approved subject to providing evidence as required by section 17 of Tanzania Investmnet Act,1997

Decision

Approved

Ag EXD

27/02/12

EBONY AND COMAPANY LTD

(1)

P. O. Box 4051, DAR ES SALAAM, TANZANIA

Executive Director
Tanzania Investment Centre
P.O Box 938
DAR ES SALAAM

27th January 2012

Sir/

RE: APPLICATION FOR TIC CERTIFICATE OF INCENTIVES

Please refer the above company.

EBONY AND CO LTD IS company incorporated in Tanzania with objective of establishment of manufacturing of CONSTRUCTION MATERIALSS Tanzania applying to register the manufacturing project with TIC so that we can enjoy benefits associated with the Certificate of Incentives issued by TIC. The said project will be based in Dar es Salaam, Tanzania

Kindly find the following attachment:

1. TIC Application Form
2. Business Plan
3. Certified Title Deed
4. Board Resolution
5. Introduction Letter from Bank

TANZANIA INVESTMENT CENTRE
09 FEB 2012
TANZANIA

Waiting to hearing from you soon
Regards

Managing Director