
議事録

日時：6月14日 10:00～

場所：JICA 事務所

出席者：JICA ケニア事務所 / 狩野所長、齊藤所員

SMASSE / 杉山チーフアドバイザー、長沼調整員

調査団 / 原田団長、竹中、増田、井口

協議内容

- ・ 団長より調査概要の説明がなされた。
- ・ 杉山チーフアドバイザーよりプロジェクトについて以下の説明がなされた。
 - 予算は初年度の 2000 万 ksh から 4000 万 ksh に引き上げられた。
 - プロジェクトスタッフは全て現職教育省スタッフであるため、新たな人件費は発生していない。
 - 第三国研修ニーズは拡大してきている。
 - 現要請機材リストは改めて精査する必要あり。
 - CEMASTEА の敷地は労働省と教育省の間で移管手続きが何度か繰り返された。
 - CEMASTEА 設立の法的措置はまだ実施されていない。(条文案は約 1 年前に作成され、教育省に提出済み。) 現状は KSTC の分校のような扱いとなっている。
 - 計画地の土地登記簿等の法的文書を入手するべきである。
 - 施設計画は将来の拡張を考慮した計画としてほしい。

議事録

日時：6月14日 11:30～

場所：大使館

出席者：大使館 / 大石書記官、SMASSE / 杉山チーフアドバイザー、長沼調整員

調査団 / 原田団長、竹中、齊藤、増田、井口

協議内容

- ・ 団長より調査概要の説明がなされた。
- ・ CEMASTEА 設立の法的措置がまだ実施されていない点について
 - 現状は KSTC の分校的な扱いになっており、KSTC の新規教員養成と SMASSE の現職教員研修が同居している。それぞれ一本化されるのが望ましい。(杉山)
 - 将来の持続的な活動を担保する上で法的措置が速やかになされることが望ましい。大使館からも先方に対して早期に実現させるようお願いしてもらいたい。(原田)
 - 了解した。(大石)
- ・ AICAD 等の既存施設の使用について
 - 調査の結果、既存施設利用が難しいのであれば、先方の要請に沿ってプロジェクトを進めることになる。プロジェクトの将来的な活動計画、ケ国政府の取り組み姿勢

等、十分に調査してほしい。(大石)

議事録

日時：6月14日 14:30～

場所：MOEST 7階会議室

出席者：MOEST / PS. Prof. K. Mutahi, Mr. O. Kajumbi, Mr. G. Lengoiboni, Mr. D. Siele, Mr. M. J. Orwa, Mrs. M. Mwiroti, Mr. J. N. Gacivhi, CEMASTEА / Mr. B. M. Njuguna SMASSE / 杉山チーフアドバイザー、長沼調整員

調査団 / 原田団長、竹中、斉藤、増田、井口

協議内容

- ・ 団長より調査概要の説明がなされた。
- ・ PS よりプロジェクトの概要についてブリーフィングがなされた。
- ・ 要請内容について
 - 要請書提出後に新しい教育政策が作成された。内容は Education Sector Support Program(2005-2010)と、 Session Paper No.1 of 2005 に詳述されている。この新たな政策の出現により要請内容を変更したい。(PS)
 - 修正機材リストは7月中に正式提出してほしい。施設内容については官団員滞在中に概要を提出してもらいたい。(原田)
- ・ 教育事情について
 - 研修ニーズは拡大してきている。特に初等教育の無料化に伴い、中学生徒数は今後増大する。今年の中学生徒数は現在 690,000 人であり、これは小学校卒業生徒数の 52%にあたるが、目標はこれを 70%にすることである。中等教育については 中学校整備、 理数科教育の強化、 理数科機材の整備、 教員再教育 の4点が同等に重要と捉えている。理数科機材は各ディストリクトに毎年 10 校づつ、財政的に厳しい学校から順次整備を行う。全国で 72 ディストリクトがあるため、毎年 720 校づつ整備することになる。これは CEMASTEА で実施される研修成果を現場で反映させるために必要な措置である。(PS)
- ・ CEMASTEА について
 - CEMASTEА 設立の法的措置がまだ実施されていないようだがどうなっているか。(原田)
 - 既に手続きに入っている。Legal Notice 後に教育大臣が署名すればよい。3ヶ月以内に完了する。(PS)
 - AICAD、KSTC 等他施設とのデマケはどうなっているか。(原田)
 - AICAD は貧困削減を目的としており、大学と連携して活動している。CEMASTEА は中等理数科教育強化が目的であり、両施設の目的は全く異なる。また、KSTC は新規教員養成のための施設であるのに対し、CEMASTEА は現職教員のための再訓

練施設である。両者は全く異なる。(PS)

- 研修ニーズは今後も拡大していくことが予想される。計画にあたっては整備施設の将来的拡張性についても考慮してほしい。(PS)

議事録

日時：6月15日 9:00～

場所：CEMASTEА

出席者：CEMASTEА / Mr. Njuguna, Mr. M. M. Waititu, Mr. P. Kogolla, Mrs. Peula Lelei, Mr. Kithaka Njogu

SMASSE / 杉山チーフアドバイザー、長沼調整員

調査団 / 原田団長、竹中、斉藤、増田、井口

協議内容

- ・ 団長より調査概要の説明がなされた。
- ・ 要請施設
 - Njuguna氏が以下の追加要請を提示し、追加理由を説明した。
 - 多目的ホール
研修課程において、研修生と研修員全員が一同に会する場が必要である。研修生 200人と研修員及び来客等を加えて 300人規模のホールが必要である。
 - ダイニングホール/キッチン
既存宿泊施設の収容人数は 92人であるため、200人に拡大すれば既存のダイニングホールでは賄いきれない。
 - 保健室
CEMASTEА 近郊に病院はない。研修生は現職教員や校長であり、高齢者が多い。先月も 7人が研修中に発熱した。応急処置の可能な保健室が必要である。看護師を 1名配置する。
 - ICT
コンピューター研修の需要は急激に高まっている。30~50人規模の整備が必要である。
 - 追加要請項目と要請理由を書面にまとめて明日提出してほしい。また、要請施設コンポーネントのプライオリティを記載してほしい。(原田)
- ・ 要請機材
 - 整備機材選定のクライテリアを示してほしい。(Njuguna)
 - 要請では初等教育用機材も含まれているが、要請書にあるように中等教育だけでなく、初等も含めた基礎教育を対象としているのか。(原田)
 - その通りである。SMASSE は中等理数科を対象としてスタートしたが、その後 NEPAD とも合意を結び、域内第三国研修ニーズが拡大してきている。第三国からは基礎教育に対するニーズが高い。(Njuguna)

- ・ 土地登記
 - 土地登記は未だなされていないが、早急に'TITLE DEED'の取得手続きを取る。

議事録

日時：6月15日 14:30～

場所：KSTC

出席者：KSTC / 校長 Mr. P.W. Kibui, Mr. J. Ondera, Mr. C. W. Mahugn, Mrs. M. A. Ojiano, Mrs. R. W. Mhaya, Mrs. G. M. Wang'ombe, Mr. B.K. Munguti, Mr. M. Lubabali, Mr. J. K. Sigei, Mrs. M. B. Inuani, Mr. J. K. Mwangi, Mr. A. A. Masimba
CEMASTEА / Mr. Njuguna, SMASSE / 杉山チーフアドバイザー、長沼調整員
調査団 / 原田団長、竹中、斉藤、増田、井口

協議内容

- ・ 校長および Njuguna 氏より SMASSE の経緯説明がなされた。
- ・ 施設について校長より説明がなされた。
 - 新たにコンピューター講座が設けられ、3 教室が専有されることとなった。
 - 宿泊室はツインベッドルーム 288 室である。SMASSE フェーズ 1 では 1 年間に 2 回の休暇期間中に SMASSE が全室使用していた。現在は Examination Council が休暇期間中の施設を使用しているため、年間を通して SMASSE が施設を使用する余地は全くない。
- ・ デマケ / 相互関係について
両者はそれぞれ Pre-Service と In-Service であり、内容は異なるが、ベースラインサーベイ等の情報を共有する可能性はある。(校長)

議事録

日時：6月16日 9:00～

場所：SMASSE 事務所 (KSTC)

出席者：CEMASTEА / Mr. Njuguna, SMASSE / 杉山チーフアドバイザー、長沼調整員
調査団 / 原田団長、竹中、斉藤、増田、井口

協議内容

- ・ 追加要請施設を含めた修正要請施設リストが CEMASTEА から提出された。
- ・ 要請内容について協議を行った。
 - ICT はコンピューターソフトの更新等の課題があり、整備を行うのは慎重を要する。また、現在の研修では行われていないのではないかと。(原田)
 - 各ディストリクトインセットセンターには 2 台の PC が設置されているが、教員が PC を使えないのが現状である。コンピューター研修は必須項目となる。(Njuguna)
 - ICT というよりはコンピューター教室と考えてよいか。(原田)

- その通り。(Njuguna)

議事録

日時：6月16日 14:15～

場所：AICAD

出席者：AICAD / 稲垣チーフアドバイザー、平林アドバイザー、大使館 / 大石書記官
CEMASTEА / Mr. Njuguna SMASSE / 杉山チーフアドバイザー、長沼調整員
調査団 / 原田団長、竹中、斉藤、増田、井口

協議内容

- ・ プロモーションフィルムの後、稲垣チーフアドバイザーより AICAD の活動概要が説明された。
- ・ 平林アドバイザーより宿泊施設について説明がなされた。
 - 収容能力はツインベッドルーム 40 室 (80 人)
 - 稼働率は 2002 年のオープン以来上がってきている。現在 38%だが、来年は 60%を目標としている。
 - リネン、清掃等のメンテナンスは外注している。
 - ベッドが日本人用ともいえるサイズのため小さすぎる。ツインベッドをつなげて 1 台として使用するケースも少なくない
 - 施設周辺は蚊が多いため電気式のベープマットを備え付けた。
 - 立地上、宿泊客が生活用品を手に入れにくい。施設内での販売を検討中である。
 - 宿泊室は 2 階のため、身障者に対するバリアとなっている。リフトまたはスロープの設置を検討中である。
- ・ 仮に CEMASTEА の研修生が利用する場合、利用料の免除・減額はあるか。(原田)
- ・ 原則としてない。(平林)

議事録

日時：6月17日 9:30～

場所：SMASSE 事務所 (KSTC)

出席者：CEMASTEА / Mr. Njuguna、SMASSE / 杉山チーフアドバイザー、長沼調整員
調査団 / 原田団長、竹中、斉藤、増田、井口

協議内容

- ・ 調査団よりミニッツ案を提示し、協議を行った。
- ・ ミニッツ署名は 6 月 18 日 16:00 に行われる予定となった。

議事録

日時：6月18日 15:00～

場所：MOEST 10階会議室

出席者：MOEST / PS Prof. Mutahi、Mrs. Mwiroti、Mr. Siele、Mr. A. A. Raten'g、Mr. P. L. Shonko、Mr. S. M. Ole Kingi、Mrs. Emily Masinjils

CEMASTEА / Mr. Njuguna、SMASSE / 杉山チーフアドバイザー、長沼調整員

調査団 / 原田団長、竹中、斉藤、増田、井口

協議内容

- ・ ミニッツ署名を行った。
-

議事録

日時：6月20日 9:00～

場所：SMASSE 事務所 (KSTC)

出席者：CEMASTEА / Mr. Njuguna、SMASSE / 杉山チーフアドバイザー、長沼調整員

調査団 / 増田、井口

協議内容

- ・ 要請施設内容と人員配置計画について確認した。
 - ・ 研修計画の概要について確認した。
 - ・ 修正機材リスト案は22日午後に提示される予定。
-

議事録

日時：6月20日 15:00～

場所：JICA 事務所

出席者：JICA / 稲村次官、SMASSE / 杉山チーフアドバイザー、長沼調整員

調査団 / 原田団長、竹中、斉藤、増田、井口

協議内容

- ・ 団長より中間報告がなされた。
- ・ 事業コストが予算を上回ることも予想されるため、コンピューター等、要請機材の一部を現地業務費で調達することも考慮する必要がある。
- ・ 今後のスケジュールについて確認した。

議事録

日時：6月20日 16:30～

場所：大使館

出席者：大使館 / 大石書記官 SMASSE / 杉山チーフアドバイザー、長沼調整員
調査団 / 原田団長、竹中、斉藤、増田、井口

協議内容

- ・ 団長より中間報告がなされた。
 - ・ 調査団より大使館への依頼事項（機材リスト、土地登記書、施設設立官報公示）を確認した。
-

議事録

日時：6月21日 9:30～

場所：CEMASTEА

出席者：CEMASTEА / Mr. Njuguna, Mr. Mwai, Mme. Okumu, Mr. Waititu, Mr. Kogolla, Mr. Arimi, Mr. Obadiah SMASSE / 杉山チーフアドバイザー
調査団 / 増田、井口

協議内容

以下の項目について調査、確認を行った。

- ・ 敷地境界
 - ・ 既存施設 / 使用状況
 - ・ 既存施設人員配置状況
 - ・ 既存機材整備 / 使用状況
-

議事録

日時：6月22日 9:00～

場所：SMASSE 事務所（KSTC）

出席者：CEMASTEА / Mr. Njuguna SMASSE / 杉山チーフアドバイザー
調査団 / 井口

協議内容

以下の項目について協議を行った。

- ・ 施設利用計画

議事録

日時：6月22日 9:30～

場所：CEMASTEА

出席者：CEMASTEА / Mr. Njuguna、Mr. Waititu、Mr. Kogolla、Mr. Arimi、Mr. Obadiah
調査団 / 増田

協議内容

修正機材リストを受領し、各学科長と以下項目について説明、協議をし、再修正を要請した。

- ・ 機材選定基準
- ・ 研修方法

議事録

日時：6月22日 10:30～

場所：TRIAD ARCHITECTS / Mr.Gitoho、Mr.Makokha

出席者：CEMASTEА / Mr. Mwai 調査団 / 井口

協議内容

以下の項目について協議を行った。

- ・ TRIAD に対して以下の提供を求めたところ、明日までに用意できるとの返答を得た。
 - CEMASTEА 既存施設図のデータファイル
 - 井戸掘削時の仕様書
 - 計画サイト周辺の地耐力一般情報
 - 建設物価上昇率
 - 自家発電機の現地調達可能メーカー
- ・ 以下についての一般的情報を得た。
 - 標準的建設資材の調達情報
 - ケ国建築基準

議事録

日時：6月22日 15:00～

場所：SMASSE 事務所 (KSTC)

出席者：CEMASTEА / Mr. Njuguna SMASSE / 杉山チーフアドバイザー
調査団 / 井口、増田

協議内容

以下の項目について協議を行った。

- ・ National Inset 用研修機材整備計画およびサイクルプログラム

議事録

日時：6月23日 9:30～

場所：CEMASTEА

出席者：SMASSE / 武村専門家 調査団 / 増田

協議内容

以下の項目について協議を行った。

- ・ 研修方法、教育機材整備方針、センターの基本概念
-

議事録

日時：6月23日 11:00～

場所：TRIAD ARCHITECTS / Mr.Makokha

出席者：調査団 / 増田、井口

協議内容

TRIAD は依頼されていた以下のデータ、情報を提出した。

- ・ CEMASTEА 既存施設図のデータファイル
 - ・ 自家発電機の現地調達可能メーカー
 - ・ 井戸掘削時のコンサルタントコメント
-

議事録

日時：6月24日 9:30～

場所：CEMASTEА

出席者：CEMASTEА / Mr. Waititu SMASSE / 武村専門家、内山専門家、徳田専門家
調査団 / 井口、増田

協議内容

各学科専門家より、以下の項目について意見交換を行った。

- ・ ケ国側より提出された修正機材リストについて
 - ・ 研修、実験の実施方法、施設設計に関する要望
 - ・ 物理、化学、生物の修正機材リストの見直しを、武村専門家を通じて各科に依頼する。
-

議事録

日時：6月27日 9:00～

場所：SMASSE 事務所 (KSTC)

出席者：CEMASTEА / Mr. Njuguna SMASSE / 杉山チーフアドバイザー
調査団 / 井口

協議内容

以下の項目について協議を行った。

- ・ 施設規模の設定根拠
 - ・ 組織の現状と計画
 - ・ これまでの運営状況
-

議事録

日時：6月27日 10:30～

場所：CEMASTEА

出席者：CEMASTEА / Mr. Waititu SMASSE / 武村専門家、調査団 / 増田

協議内容

- ・ District Center およびトレーナーに関する資料収集をする。
 - ・ CEMASTEА に対する各機関からの要請についての情報収集をする。
-

議事録

日時：6月28日 9:00～

場所：SMASSE 事務所 (KSTC)

出席者：CEMASTEА / Mr. Njuguna SMASSE / 杉山チーフアドバイザー
調査団 / 井口

協議内容

以下の項目について協議を行った。

- ・ 運営計画
 - ・ 予算と支出
-

議事録

日時：6月28日 10:30～

場所：SMASSE 事務所 (KSTC)

出席者：CEMASTEА / Mr. Njuguna SMASSE / 杉山チーフアドバイザー

調査団 / 井口、増田

協議内容

- ・ 維持管理、機材供給会社の資料を収集した後、増田団員は主要教育機材供給会社 4 社と面談する。
-

議事録

日時：6月29日 11:00～

場所：TRIAD ARCHITECTS / Mr. Gitoho、Mr. Ndungu、Mr. Makokha

出席者：調査団 / 増田、井口

協議内容

TRIAD は依頼されていた以下のデータ、情報を提出した。

- ・ CEMASTEА 既存施設図の不足分データファイル
 - ・ 建設物価上昇率
 - ・ 建設業者リスト
 - ・ ナイロビの建設概況
-

議事録

日時：6月29日 14:00～

場所：SMASSE 事務所 (KSTC)

出席者：CEMASTEА / Mr. Njuguna SMASSE / 杉山チーフアドバイザー

調査団 / 増田、井口

協議内容

- ・ BD 調査までに先方が行うべき事項について確認した。
 - 予想施設配置の検討
 - 計画施設内容のスタディ
 - 現有家具リストの作成
 - 施設機材 (小項目) リストの作成
 - 給水計画の検討
 - ・ 今後の予想される実施スケジュールについて確認した。
 - ・ 要請機材リストを受領した。
-

議事録

日時：6月30日 10:00～

場所：JICA 事務所

出席者：JICA ケニア事務所 / 稲村次長、齊藤所員

SMASSE / 杉山チーフアドバイザー、長沼調整員 調査団 / 増田、井口

協議内容

- ・ 団より調査経過の報告がなされた。
- ・ 今後の留意事項として以下が挙げられた。
 - 先方プライオリティと現地業務費ポーションの可能性
 - 給水事情
 - 先方負担事項

添付資料-3 主要面談者リスト

MOEST (Ministry of Education Science and Technology) 教育科学技術省

Prof. K. Mutahi	教育事務次官	Permanent Secretary
Mr. Obondo Kajumbi	首席副事務官	Senior Deputy Secretary
Mr. G. Lengoiboni	事務官	Secretary
Mr. David Siele	高等教育局長	Director of Higher Education
Mr. M. J. Orwa	高等教育局長	Director of Higher Education
Mrs. M. Mwiroti	計画政策局長	Director of Planning and Policy
Mr. J. N. Gacivhi	法律局員	Legal Office
Mr. A. A. Raten'g	技術教育局長	Director of Technical Education
Mr. S. M. Ole Kingi	教育局長補佐	Senior Ass. Director of Educ. - Basic
Mrs. Emily Masinjils	教育局長補佐	Senior Ass. Director of Educ. - QAS
Mr. P. L. Shonko	TSC 副事務官	Deputy Secretary of TSC

KSTC (Kenya Science Teachers College) ケニア理数科教員養成大学

Mr. P.W. Kibui	校長	Chief Principal
Mr. J. Ondera	副校長	Deputy Principal
Mr. C. W. Mahugn	学生科長	Dean of Students
Mrs. M. A. Ojiano	英語学科長	Head of Department – English
Mrs. R. W. Mhaya	教育学科長	HOD – Education
Mrs. G. M. Wang'ombe	図書科長	HOD – Library science
Mr. B.K. Munguti	数学学科長	HOD – Mathematics
Mr. M. Lubabali	物理学科長	HOD – Physics
Mr. J. K. Sigei	化学科長	HOD – Chemistry
Mrs. M. B. Inuani	生物学科長	HOD – Biology
Mr. J. K. Mwangi	工業教育学科長	HOD – Industrial Education
Mr. A. A. Masimba	登録事務官	Registrar

SMASSE (Strengthening of Mathematics and Science in Secondary Education) – PROJECT 中等理数科教育強化プロジェクト

Mr. B. M. Njuguna	プロジェクト長	Head
Mr. M. M. Waititu	事務官 (物理)	Subject Administrator – Physics

Mr. P. Kogolla	事務官（化学）	Subject Administrator – Chemistry
Mrs. Peula Lelei	事務官（生物）	Subject Administrator – Biology
Mr. David Arimi	事務官（生物）	Subject Administrator – Biology
Mr. Kithaka Njogu	学科長（数学）	Academic Head – Mathematics
Mr. M. Obadial	事務官（数学）	Subject Administrator – Math.

在ケニア日本大使館

花谷 卓治	公使
大石 智弘	二等書記官

JICA ケニア事務所

狩野 良昭	所長
稲村 次郎	次長
斎藤 理子	所員
栗栖 昌紀	所員
Mr. E. Njenga	教育担当

JICA プロジェクト専門家

杉山 隆彦	チーフアドバイザー
長沼 啓一	業務調整
武村 重和	理科教育
徳田 智磯	数学教育
内山 葉月	理科教育
服部 浩昌	教育評価

アフリカ人造り拠点（AICAD）

Prof. A. B. Gidamis	Executive Secretary
稲垣 富一	チーフアドバイザー
平林 淳利	業務管理アドバイザー

TRIAD ARCHITECTS（ローカルコンサルタント）

Mr. James Gitoho	建築家
Mr. Charles Ndungu	建築家

Mr. Andrew Makokha

教育機材供給会社

Mr. R. O. Angolo/ Production Manager/ SEPU(School Equipment Production Unit)

Mr. D. M. Kiarie/ Customer Support/ Science Lab & Office Center

Mrs. E. W. Gitahi/ Director/ Jenath Enterprises

Mr. P. G. Kimondo/ Credit Control Dept. / Monks Medicare Africa Limited

添付資料-4 収集資料リスト

	資料名	入手先	備考
1	INSETカリキュラム	CEMASTEА	コピー
2	既存施設改修工事図面	CEMASTEА	コピー / CADデータ
3	既存厨房機器配置図及び機器リスト	CEMASTEА	コピー
4	既存井戸データ	CEMASTEА/TRIAD ARCHITECTS	コピー
5	KSTC内事務所棟現地入札資料	CEMASTEА	コピー
6	KSTC内事務所棟平面図	CEMASTEА	コピー
7	既存施設改修工事入札結果一覧表	JICA	コピー
8	Kenya Education Sector Support Programme 2005-2010 (Draft)	CEMASTEА	簡易製本
9	Sessional Paper No.1 of 2005 on A Policy Framework for Education, Training and Research	CEMASTEА	簡易製本
10	Statistical Abstract 2004 (抜粋)	CEMASTEА	コピー
11	Directorate of Quality Assurance and Standards Newsletter 2003/2004	CEMASTEА	コピー
12	CEMASTEА COUNCIL ORDER(DRAFT)	CEMASTEА	コピー
13	CEMASTEА土地家屋調査書	CEMASTEА	コピー
14	Code of Practice for the Design & Construction of Buildings & other Structures in relation to Earthquakes 1973	TRIAD ARCHITECTS	コピー
15	ローカルコンサルタント認定現地業者リスト	TRIAD ARCHITECTS	コピー
16	AICAD宿泊料金表	AICAD	コピー
17	AICAD宿泊稼働状況一覧表	AICAD	コピー

参 考 資 料

- ・ INSET カリキュラム
- ・ 研修活動計画表(2005 年)
- ・ 既存施設改修工事図面
- ・ 既存厨房機器配置図及び機器リスト
- ・ 既存井戸データ
- ・ KSTC 内事務所棟現地入札資料
- ・ 現地教育機材取り扱い業者リスト
- ・ 土地家屋調査書

資料 INSET カリキュラム

別表

INSET カリキュラム

INSET CURRICULUM

General Sessions

Cycle 1	Cycle 2	Cycle 3	Cycle 4
<ul style="list-style-type: none"> · Rationale for INSET · Communication Skills · Adolescent Psychology · Work Planning and PDSI Approach · Gender issues in Mathematics and Science · Teaching approaches and methods · Trends in teaching/ learning Science · Attitude towards teaching/ learning of Mathematics and Science · Discussion of INSET Curriculum 	<ul style="list-style-type: none"> · Project Design Matrix · Feedback on district INSET · Team Building · Resource utilization for T/L of maths and science · SMASSE INSET centre management · Rationale for Practical Work in Science and Mathematics · Facilitation/ development of write-ups · ASEI lesson design 	<ul style="list-style-type: none"> · Actualization of ASEI I · Assessment and evaluation · INSET System construction · Monitoring and Evaluation I 	<ul style="list-style-type: none"> · Actualization of ASEI II · Monitoring and Evaluation II · Effective Classroom practices- ASEI lesson demonstration · Impact of INSET at classroom level <ul style="list-style-type: none"> --Generating Indicators · Leadership Skills · Monitoring learning achievements in Maths and Sciences · Discussion on INSET write-ups

Subject Sessions - Biology

Cycle 1	Cycle 2	Cycle 3	Cycle 4
<p>Pre-INSET Evaluation Resources and Facilities for teaching and learning Biology I</p> <ul style="list-style-type: none"> · Exposition/ Discussion/ Presentation/ Hands-on activities <p>Classification</p> <ul style="list-style-type: none"> · Exposition/ Discussion/ Presentation/ Work planning/ Hands-on activities/ Peer teaching <p>Ecology</p> <ul style="list-style-type: none"> · Exposition/ Discussion/ Presentation/ Work planning/ Hands-on activities/ Peer teaching <p>Cell structure and Physiology</p> <ul style="list-style-type: none"> · Exposition/ Discussion/ Presentation/ Work planning/ Hands-on activities/ Peer teaching 	<p>Pre-INSET Evaluation Excretion and Homeostasis</p> <ul style="list-style-type: none"> · Exposition/ Discussion/ Presentation/ Work planning/ Hands-on activities/ Peer teaching <p>Stimulus and Response</p> <ul style="list-style-type: none"> · Exposition/ Discussion/ Presentation/ Work planning/ Hands-on activities/ Peer teaching <p>Reproduction</p> <ul style="list-style-type: none"> · Exposition/ Discussion/ Presentation/ Work planning/ Hands-on activities/ Peer teaching <p>Respiration</p> <ul style="list-style-type: none"> · Exposition/ Discussion/ Presentation/ Work planning/ Hands-on activities/ Peer teaching <p>Preparation of common laboratory reagents</p> <ul style="list-style-type: none"> · Exposition/ Discussion/ Presentation/ Hands-on activities <p>Resources and Facilities for teaching and learning Biology II</p> <ul style="list-style-type: none"> · Exposition/ Discussion/ Presentation/ Hands-on activities 	<p>Pre-INSET Evaluation Genetics</p> <ul style="list-style-type: none"> · Exposition/ Discussion/ Presentation/ Work planning/ Hands-on activities/ Peer teaching <p>Support and Movement</p> <ul style="list-style-type: none"> · Exposition/ Discussion/ Presentation/ Work planning/ Hands-on activities/ Peer teaching <p>Evolution</p> <ul style="list-style-type: none"> · Exposition/ Discussion/ Presentation/ Work planning/ Hands-on activities/ Peer teaching <p>Examinations and assessment in Biology</p> <ul style="list-style-type: none"> · Exposition/ Discussion/ Presentation/ Hands-on activities <p>Resources and Facilities for teaching and learning Biology III</p> <ul style="list-style-type: none"> · Exposition/ Discussion/ Presentation/ Hands-on activities <p>Actualization of ASEI and PDSI I</p> <ul style="list-style-type: none"> · Development of ASEI lesson Plans · Actual classroom teaching 	<p>Pre-INSET Evaluation District innovations Discussion Presentation</p> <p>Growth and Development</p> <ul style="list-style-type: none"> · Exposition/ Discussion/ Presentation/ Work planning/ Hands-on activities/ Peer teaching <p>Transport in Plants and animals</p> <ul style="list-style-type: none"> · Exposition/ Discussion/ Presentation/ Work planning/ Hands-on activities/ Peer teaching <p>Nutrition in Plants and animals</p> <ul style="list-style-type: none"> · Exposition/ Discussion/ Presentation/ Work planning/ Hands-on activities/ Peer teaching <p>Actualization of ASEI and PDSI II</p> <ul style="list-style-type: none"> · Development of ASEI lesson Plans · Actual classroom teaching

Subject Sessions - Chemistry

Cycle 1	Cycle 2	Cycle 3	Cycle 4
<p>1. Pre-INSET Evaluation</p> <ul style="list-style-type: none"> · Recent developments in Chemical Education · The ASEI movement · STS movement · Class management · Planning for teaching <p>2. Planning for chemistry lessons</p> <ul style="list-style-type: none"> · The chemistry syllabus/ History of chemistry in Kenya · Tools used · Work plans · Evaluation · Teaching methodologies · Diagrams (and illustrations) and set-ups in chemistry · Excursions/ projects <p>3. Topics of concern</p> <ul style="list-style-type: none"> > Mole concept > Electrochemistry > Thermal chemistry > Radiochemistry > Organic chemistry > Metals > Structure & Bonding > Projects <p>4. Chemistry classroom activities</p> <ul style="list-style-type: none"> · Practical sessions · Theory sessions · Practical/ theory sessions · Laboratory management <p>5. Chemistry INSET Curriculum evaluation I</p>	<p>1. Pre-INSET Evaluation</p> <p>2. Experiments in Chemistry</p> <ul style="list-style-type: none"> · Class experiments · Teacher demonstrations · Improvisation · Small scale experiments <p>· Integration of theory and practical work</p> <ul style="list-style-type: none"> · Record of experiments <p>3. Topics of concern</p> <ul style="list-style-type: none"> > Mole concept > Electrochemistry > Thermal chemistry > Laboratory management, safety & techniques > Organic chemistry > Metals > Structure & Bonding > Projects > Any other topic that might be considered as important during INSET <p>4. Chemistry INSET Curriculum evaluation</p>	<p>1. Pre-INSET Evaluation</p> <p>2. Assessment in Chemistry</p> <ul style="list-style-type: none"> · Rationale for assessment · Types of assessment in chemistry · Setting and marking theory papers in chemistry · Setting and marking practical work in chemistry · Teachers' Self-evaluation · Analysis of students' marks · Calculations in chemistry work <p>3. Development of materials to be used in the teaching of chemistry</p> <p>4. Special attention to be paid to the following subjects areas</p> <ul style="list-style-type: none"> > Mole concept > Electrochemistry > Thermal chemistry > Radiochemistry > Organic chemistry > Metals > Structure & Bonding > Projects <p>5. Chemistry Text book Evaluation</p> <p>6. Chemistry INSET Curriculum evaluation II</p> <p>7. Actual Classroom Implementation of ASEI Lessons</p>	<p>1. Pre-INSET Evaluation</p> <p>2. Reports and Discussions on District Innovations from Cycle 3 of District INSET</p> <p>3. Thermal chemistry:</p> <ul style="list-style-type: none"> · Hands-on activities and Calculations · Production of Teaching/ Learning Material <p>4. Organic chemistry:</p> <ul style="list-style-type: none"> · Hands-on activities · Polymers <p>5. Effective Use of Teaching/ Learning Resources:</p> <ul style="list-style-type: none"> · Improvisation and Useful Techniques in chemistry <p>6. Preparations and Practice of Chemistry INSET Lessons</p> <p>7. Actual Classroom Implementation of Chemistry ASEI Lessons</p>

Subject Sessions - Physics

Cycle 1	Cycle 2	Cycle 3	Cycle 4
<ul style="list-style-type: none"> > Pressure > Circular Motion > Fluid Flow > Waves I & II > Sound I & II 	<ul style="list-style-type: none"> > Current Electricity I & II > Electrostatics I & II > Improvisation > Magnetic Effect of an Electric Current > Electromagnetic Induction > Heating Effect of an Electric Current > Thin Lenses 	<ul style="list-style-type: none"> > Innovative Lesson Activities > Text book Evaluation > The Atom > Actualization I > Electromagnetic Spectrum > Radioactivity > Choice of Teaching/ Learning Materials > Photo-Electric Effect > X-Rays > Project work and Preparing students for Science Congress > Electronics I 	<ul style="list-style-type: none"> > District Innovative Activities > Linear Motion > Properties of Waves > Quantity of Heat > Actualization of ASEI II > Electronics II

Subject Sessions - Mathematics

Cycle 1	Cycle 2	Cycle 3	Cycle 4
<ul style="list-style-type: none"> · Subject objectives LCM · INSET curriculum · Form one Induction · Status of Mathematics classrooms/ Difficulties · KCSE results · Key concepts/ Syllabus analysis <p>ASEI-PDSI approach in Mathematics</p> <p>Teaching/ learning resources/ Textbook analysis/ Socio-cultural aspects</p> <p>Error analysis Special focus on KCSE report analysis</p> <ul style="list-style-type: none"> · Problem solving · Problem posing incorporating the Open approach · ASEI lesson narration · ASEI lesson preparation <ul style="list-style-type: none"> · Inter INSET Activities · Post-INSET Evaluation 	<ul style="list-style-type: none"> · Content Pedagogy Questionnaire Practical work in the effective teaching/ learning of mathematics · Expositions activities/ bridge · Demonstration of activities · Discussion and generation of activities <p>ASEI lesson planning</p> <ul style="list-style-type: none"> · Exposition & Discussion Presentation <p>Development of ASEI lesson plans and presentation using the topics of concern i.e. Ratio/ proportion, Loci, Vectors(2)/Transformation geometry, Trigonometry(2) Compound mixtures/ Proportions Statistics</p> <ul style="list-style-type: none"> · Exposition & Discussion of teaching approaches/ areas of difficulty <p>Peer teaching on statistics</p> <p>Integers</p> <ul style="list-style-type: none"> · Exposition & Discussion of teaching approaches/ areas of difficulty <p>Peer teaching on integers</p> <p>Probability</p> <ul style="list-style-type: none"> · Exposition & Discussion of teaching approaches/ areas of difficulty <p>Peer teaching on probability</p> <p>Indices and logarithms</p> <ul style="list-style-type: none"> · Exposition & Discussion of teaching approaches/ areas of difficulty <p>Peer teaching on indices and logarithms</p> <p>Sequences and series</p> <ul style="list-style-type: none"> · Exposition & Discussion of teaching approaches/ areas of difficulty <p>Peer teaching on sequences and series</p> <p>Topic centered study</p> <ul style="list-style-type: none"> · Topics of concern · Effective teaching strategies <p>Formation of district task force on topics of concern</p> <ul style="list-style-type: none"> · Monitoring & Evaluation Instruments Post-INSET Evaluation 	<p>District reports</p> <p>Feedback inter-INSET tasks</p> <p>Assessment in Mathematics</p> <ul style="list-style-type: none"> · Exposition · Discussion <p>Assessment in Mathematics</p> <ul style="list-style-type: none"> · Reports · Classroom practices · Discussion <p>3-Dimensional Geometry</p> <ul style="list-style-type: none"> · Exposition · Teaching approaches/ areas of difficulty · Discussion <p>3-Dimensional Geometry</p> <p>ASEI lesson preparation</p> <p>Peer teaching</p> <p>3-Dimensional Geometry</p> <p>Practical activities</p> <p>Compound, Proportions/ Rates/ Mixtures</p> <ul style="list-style-type: none"> · Exposition · Teaching approaches/ areas of difficulty · Discussion <p>Vectors</p> <ul style="list-style-type: none"> · Exposition · Teaching approaches/ areas of difficulty · Discussion · Peer teaching <ul style="list-style-type: none"> · Sample ASEI lessons by National trainers · Resolutions <p>Linear Programming</p> <ul style="list-style-type: none"> · Exposition · Teaching approaches/ areas of difficulty · Discussion <ul style="list-style-type: none"> · ASEI lesson planning · Peer teaching <p>Preparation of ASEI lessons for Actualization</p> <p>Actualization in the field</p> <p>Actual Teaching</p> <p>Teaching of improved lessons</p> <ul style="list-style-type: none"> · Video tape viewing of lesson presentations · Discussions for improvement <p>Inter-INSET Activities and Development of write-ups</p>	<p>District Innovations Challenges</p> <p>Way-forward</p> <p>Classroom management</p> <ul style="list-style-type: none"> · Exposition · Classroom Video tape viewing · Discussion · Peer teaching <p>Teachers as researchers and Techniques of classroom research</p> <p>Discussion on worksheet</p> <p>Loci</p> <ul style="list-style-type: none"> · Exposition · Discussion of teaching approaches/ areas of difficulty · ASEI lesson preparation on Loci · Peer teaching <p>Error and approximation</p> <p>Navigation</p> <ul style="list-style-type: none"> · Exposition · Discussion of teaching approaches/ areas of difficulty · ASEI lesson preparation on Navigation · Peer teaching <p>Reflection and Congruency</p> <ul style="list-style-type: none"> · Exposition · Discussion of teaching approaches/ areas of difficulty · ASEI lesson preparation · Peer teaching <p>ASEI lesson planning for Actual Classroom Teaching</p> <p>Actual Classroom Teaching</p> <p>Lesson discussions, reflections and adaptations</p>

別表

National INSET サイクル2プログラム

CYCLE 2 OF SMASSE NATIONAL INSET 2005

Day	Time	Activities	Personnel	Remarks	
Day 1 Sun	16:00	Arrival and Registration of Participants			
Day 2 Mon	08:00-08:30	Registration		All Participants	
	08:30-09:30	Opening Ceremony	Head of INSET Centre Team Leader	SMASSE Personnel	
	09:30-10:00	a) INSET Guidelines & INSET Objectives			
	10:00-10:30	b) Pre-INSET Evaluation	SMASSE Personnel	All Participants (Individual subject groups)	
	10:30	TEA-BREAK			
Day 3 Tue	11:00-13:00	Feed back on District INSET	Matiri, Masoka, Chiira, Tom, Odhiambo, Kizito	All Participants	
	13:00	LUNCH			
	14:00-16:00	Team building	Kilonzo, Ombati, Makanda, Thuo, Nyamai	All Participants	
	16:00-17:00	SMASSE PDM	Gitau, Matembo, Maate, Kariuki, Kireru	All Participants	
	Evening	Development of District INSET Write-ups			
Day 4 Wed	08:00-08:30	Registration	SMASSE Personnel	All Participants	
	08:30-10:30	Resource Utilization for T/L of M/S	Kogolla, Waibochi, Mtua, Mureithi, Nengo, Masai	All Participants	
	10:30	TEA-BREAK			
	11:00-13:00	SMASSE INSET Centre Management	Lelei, Kamau, Ngeny, Muraya, Gathambiri	All Participants	
	13:00	LUNCH			
Day 5 Thu	14:00-17:00	Facilitation/ Development of Write-ups	Waititu, Tokuda, Rabari, Kisaka, Gachuhi	All Participants	
	Evening	Development of District INSET Write-ups			
	Day 6 Fri	08:00-08:30	Registration	Orado, Kithaka, Chesire, Oyuga, Kirunja, Mercy, Oduor, Mburu	All Participants
		08:30-10:30	ASEI lesson design		
		10:30	TEA-BREAK		
11:00-13:00		ASEI lesson design	Orado, Kithaka, Chesire, Oyuga, Kirunja, Mercy, Oduor, Mburu	All Participants	
13:00		LUNCH			
Day 7 Sat	14:00-17:00	Practical Work for Effective T/L of M/S	Maganga, Odindo, Kibanya, Sharbaidi, Arimi, Opel, Jakomanyo	All Participants	
	Evening	Development of District INSET Write-ups			

Day	Time	CHEMISTRY	BIOLOGY	PHYSICS	MATHS
	08:30-10:30	Content Pedagogy Questionnaire	Content Pedagogy Questionnaire Resources for teaching/ learning biology Feedback from participants and discussion of innovations	Content Pedagogy Questionnaire	Content Pedagogy Questionnaire
	10:30	TEA-BREAK			

Day 5 Thu	11:00-13:00	<ul style="list-style-type: none"> Brief Introduction to Cycle 2 INSET Curriculum, Theme & Strategy Chemistry Laboratory Safety, Management and Techniques 	Resources for teaching/ learning biology <ul style="list-style-type: none"> Topic focused construction of Teaching aids Hands-on activities 	THIN LENSES Challenges and their remedies · individual reflection; Group sharing on the above. Experiments/ improvisations and use in teaching and learning <ul style="list-style-type: none"> a) Demonstration of improvisations to groups b) ASEI lesson demonstrations by SMASSE trainers c) Individually carryout conventional exp. d) Trial of improvised experiment 	Practical work in the effective teaching/ learning of mathematics <ul style="list-style-type: none"> Exposition· activities/ bridges Demonstration of activities Discussion and generation of activities 	
	13:00	LUNCH				
	14:00-17:00	<ul style="list-style-type: none"> Class experiments that require elaborate safety precaution <ul style="list-style-type: none"> > Activities 	<ul style="list-style-type: none"> Hands-on activities Wrap-up 	<ul style="list-style-type: none"> ASEI lesson planning Identification of concepts for the lessons Allocation of concepts for lesson plan development Physics ASEI lesson development Peer teaching Lesson improvement strategy Improvement of lesson plan 	<ul style="list-style-type: none"> Demonstration of practical activities on topics of concern Peer teaching 	
Day 6 Fri	08:30-10:30	<ul style="list-style-type: none"> Feedback on activities/ exp. Rationales for Project work in Chem. <ul style="list-style-type: none"> > Exposition > Discussion 	Preparation of common lab reagents <ul style="list-style-type: none"> Discussion of current status Group reports 	ELECTROMATIC INDUCTION Challenges and their remedies <ul style="list-style-type: none"> Individual reflection Group sharing on the above 	Integers <ul style="list-style-type: none"> Exposition Discussion of teaching approaches/areas of difficulty 	
	10:30	TEA-BREAK				
		11:00-13:00	<ul style="list-style-type: none"> > Discussion & Reporting Experiments and discussions on Thermo-chemistry 	<ul style="list-style-type: none"> Hands-on activities 	<ul style="list-style-type: none"> Experiments/ Improvisations and use in teaching and learning e) Demonstration of improvisations to groups f) ASEI lesson demonstrations by SMASSE trainers g) Individually carryout conventional exp. Trial of improvised experiment 	Discussion of teaching approaches/ areas of difficulty
		LUNCH				
		14:00-17:00	<ul style="list-style-type: none"> Combustion of Ethanol Hess's law using heat of solution/ heat of neutralization Feedback on practical session 	<ul style="list-style-type: none"> Hands-on activities Wrap-up 	<ul style="list-style-type: none"> ASEI lesson planning Identification of concepts for the lessons Allocation of concepts for lesson plan development Physics ASEI lesson development Peer teaching Lesson improvement strategy Improvement of lesson plan 	Peer teaching and lesson improvement
Day 7 Sat						
Day 8 Sun						

Day 9 Mon	08:00-10:30	Registration Experiments and Discussions on the Mole <ul style="list-style-type: none"> ➤ Determination of empirical formulae ➤ Discussion 	Form One Induction	Current Electricity Challenges and their remedies <ul style="list-style-type: none"> - Individual reflection - Group sharing on the above 	Probability <ul style="list-style-type: none"> • Exposition • Discussion of teaching approaches/ areas of difficulty
	10:30	TEA-BREAK			
	11:00-13:00	+ Back titration + Discussion Feedback on the activities	Role of Peer teaching in biology INSET	- Experiments/ improvisations and use in teaching and learning h) Demonstration of improvisations to groups i) ASEI lesson demonstrations by SMASSE trainers j) Individually carryout conventional exp. Trial of improvised experiment	• Discussion of teaching approaches/ areas of difficulty
	13:00	LUNCH			
	14:00-17:00	Peer teaching <ul style="list-style-type: none"> ➤ Feedback 	Reproduction <ul style="list-style-type: none"> • Discussion of current status • Group reports 	<ul style="list-style-type: none"> • ASEI lesson planning • Identification of concepts for the lessons • Allocation of concepts for lesson plan development • Physics ASEI lesson development • Peer teaching • Lesson improvement strategy Improvement of lesson plan 	Peer teaching and lesson improvement
Day 10 Tue	08:00-10:30	Registration Experiments and Discussions on Organic Chemistry: Hydrocarbons Feedback on the activities	- Hands-on activities	Magnetic Effect of an Electric Current Challenges and their remedies <ul style="list-style-type: none"> - Individual reflection - Group sharing on the above 	Statistics <ul style="list-style-type: none"> • Exposition • Discussion of teaching approaches/ areas of difficulty
	10:30	TEA-BREAK			
	11:00-13:00	Experiments and Discussions on Organic Chemistry: Polymers Feedback on the activities	<ul style="list-style-type: none"> • Hands-on activities • Preparation of work plans 	<ul style="list-style-type: none"> - Experiments/ improvisations and use in teaching and learning k) Demonstration of improvisations to groups l) ASEI lesson demonstrations by SMASSE trainers m) Individually carryout conventional exp. Trial of improvised experiment 	• Discussion of teaching approaches/ areas of difficulty
	13:00	LUNCH			
	14:00-17:00	Making work plans for peer teaching based on ASEI/ PDSI	<ul style="list-style-type: none"> • Peer Teaching Stimulus and response • Discussion of current status • Group reports 	<ul style="list-style-type: none"> • ASEI lesson planning • Identification of concepts for the lessons • Allocation of concepts for lesson plan development • Physics ASEI lesson development • Peer teaching • Lesson improvement strategy Improvement of lesson plan 	Peer teaching and lesson improvement

Day 11 Wed	08:00-10:30	Registration Peer teaching and feedback on peer teaching	Stimulus and response · Hands-on activities	Electrostatics Challenges and their remedies · Individual reflection · Group sharing on the above	Indices and logarithms · Exposition · Discussion of teaching approaches/ areas of difficulty
	10:30	TEA-BREAK			
	11:00-13:00	Experiments and Discussions on: · Effect of concentration on equilibrium Non-metals · Reducing properties of ammonia · Burning of ammonia in oxygen Feedback on the activities	· Hands-on activities · Preparation of work plans	· Experiments/ improvisations and use in teaching and learning n) Demonstration of improvisations to groups o) ASEI lesson demonstrations by SMASSE trainers p) Individually carryout conventional exp. Trial of improvised experiment	· Discussion of teaching approaches/ areas of difficulty
	13:00	LUNCH			
Day 12 Thu	14:00-17:00	Experiments and Discussions on Electrochemistry: · Movement of Ion · Measuring the relative tendencies of metals to Ionize/ Fruit cell · Properties of Ionic and Covalent compounds Feedback on session	· Peer Teaching Excretion and Homeostasis · Discussion of current status · Group Reports	· ASEI lesson planning · Identification of concepts for the lessons · Allocation of concepts for lesson plan development · Physics ASEI lesson development · Peer teaching · Lesson improvement strategy Improvement of lesson plan	Peer teaching and lesson improvement
	08:00-10:30	Experiments and Discussions on Electrochemistry: · Farady's 1 st law of electrolysis Feedback on session	· Hands-on activities	Heating Effect Challenges and their remedies · Individual reflection Group sharing on the above	Sequences and series · Exposition · Discussion of teaching approaches/ areas of difficulty
	10:30	TEA-BREAK			
	11:00-13:00	Hands-on Activities and Discussions on Development of: · Electrolysis apparatus	· Hands-on activities · Wrap-up discussion Respiration · Discussion of current status	· Experiments/ improvisations and use in teaching and learning q) Demonstration of improvisations to groups r) ASEI lesson demonstrations by SMASSE trainers s) Individually carryout conventional exp. Trial of improvised experiment	· Discussion of teaching approaches/ areas of difficulty
Day 13	13:00	LUNCH			
	14:00-17:00	· Conductivity tester · Current detector Feedback on the activities	· Group Reports · Hands-on activities	· ASEI lesson planning · Identification of concepts for the lessons · Allocation of concepts for lesson plan development	Peer teaching and lesson improvement
	08:00-10:30	Experiments and Discussions on Metals: · Reactions of magnesium with steam The Thermit Process	· Hands-on activities · Wrap-up discussion	· Physics ASEI lesson development · Peer teaching · Lesson improvement strategy Improvement of lesson plan	Topic centered study · Topics of concern · Inter-INSET tasks and activities
	10:30	TEA-BREAK			

Fri	11:00-13:00	Feedback on activities Post-INSET evaluation	Feedback on activities Post-INSET evaluation	Feedback on activities Post-INSET evaluation	Inter-INSET tasks and activities
	13:00	LUNCH			
	14:00-17:00	Open forum/ Clearance Closing Ceremony	Open forum/ Clearance Closing Ceremony	Open forum/ Clearance Closing Ceremony	Open forum/ Clearance Closing Ceremony
Day 14 Sat		Participants Leave			

資料 研修活動計画表(2005年)

別表 研修活動計画表 (2005年)

	活動内容	参加人数	日時	開催場所
1	ナショナル INSET	90	1月第3週～4週	CEMASTEА
2	ナショナル INSET	90	2月第1週～2週	CEMASTEА
3	インパクト分析		2月第1週～2週	各ディストリクト
4	ナショナル INSET	90	2月第3週～4週	CEMASTEА
5	フィリピン研修	20	2月～3月	フィリピン
6	ナショナル INSET	90	3月第1週～2週	CEMASTEА
7	ナショナル INSET	90	3月第3週～4週	CEMASTEА
8	モニタリング・評価	20ディストリクトセンター	4月第1週～4週	各ディストリクト
9	日本研修	12	2月～3月	日本
10	ナショナル INSET	90	4月第1週～2週	CEMASTEА
11	ナショナル INSET	90	4月第3週～4週	CEMASTEА
12	ナショナル INSET	90	5月第1週～2週	CEMASTEА
13	ナショナル INSET	90	5月第3週～4週	CEMASTEА
14	域内会議		5月第3週～4週、 6月の第1週	キガリ
15	ナショナル INSET	90	6月第1週～2週	CEMASTEА
16	ナショナル INSET	90	6月第3週～4週	CEMASTEА
17	校長 INSET	90	7月第1週	CEMASTEА
18	インパクト分析		7月第1週～2週	各ディストリクト
19	校長 INSET	90	7月第2週	CEMASTEА
20	視学官 INSET	90	7月第3週	CEMASTEА
21	視学官 INSET	90	7月第4週	CEMASTEА
22	JOCV 研修		8月第1週～2週	CEMASTEА
23	モニタリング・評価	48ディストリクトセンター	8月第1週～4週	各ディストリクト
24	日本研修	4	8月～10月	日本
25	マラウイ INSET		8月、10月	マラウイ
26	TIVET INSET	200	8月第1週	KSTC
27	Stakeholders 研修	600	8月第3週	KSTC
28	地方教育長研修	72	8月第4週	CEMASTEА
29	校長 INSET	90	9月第2週	CEMASTEА
30	校長 INSET	90	9月第3週	CEMASTEА
31	視学官 INSET	90	9月第4週	CEMASTEА
32	SPIAS		9月第4週	各ディストリクト
33	視学官 INSET	90	10月第1週	CEMASTEА
34	SPIAS		10月第1週～2週	各ディストリクト
35	内部研修	82	10月第3週	CEMASTEА
36	中間評価		10月～11月	SMASSE
37	第三国研修	88	11月～12月	CEMASTEА
38	JOCV 研修	50	12月第1週～2週	CEMASTEА
39	モニタリング・評価 WECSA メンバー国		4月～7月	各国

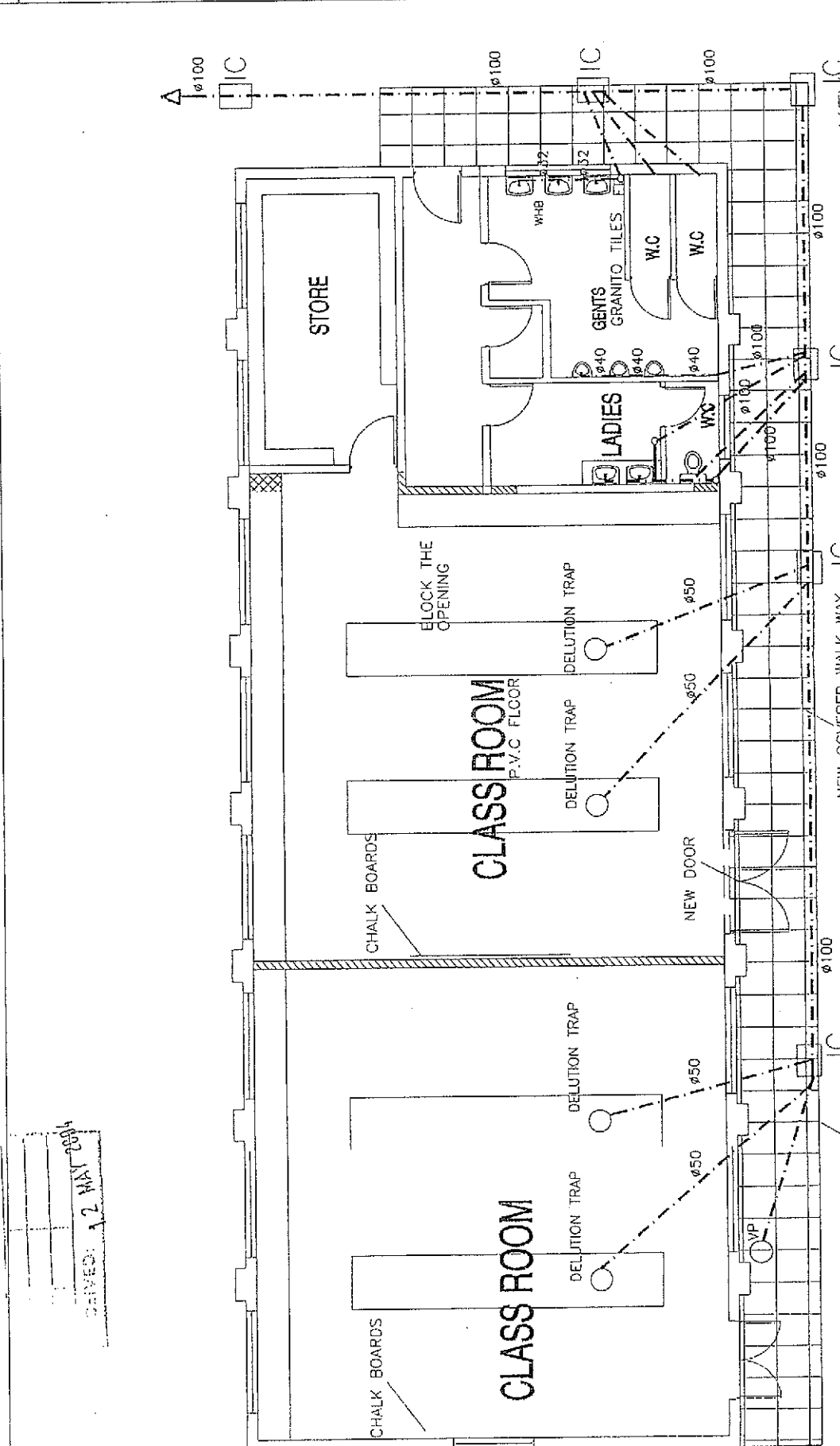
資料 既存施設改修工事図面

NO.	REVISIONS
1	ALL WORKING DRAWINGS TO BE CHECKED BY THE ARCHITECT
2	DO NOT SCALE FROM THIS DRAWING

REVISIONS	
NO.	DESCRIPTION

Client	J.I.C.A.
Architect	TRHAD
Architect registered	
Structural Engineer	
Project	CEMISTIA
By	LABORATORY/CLASS ROOM
For	THE DRAWING OFFICE

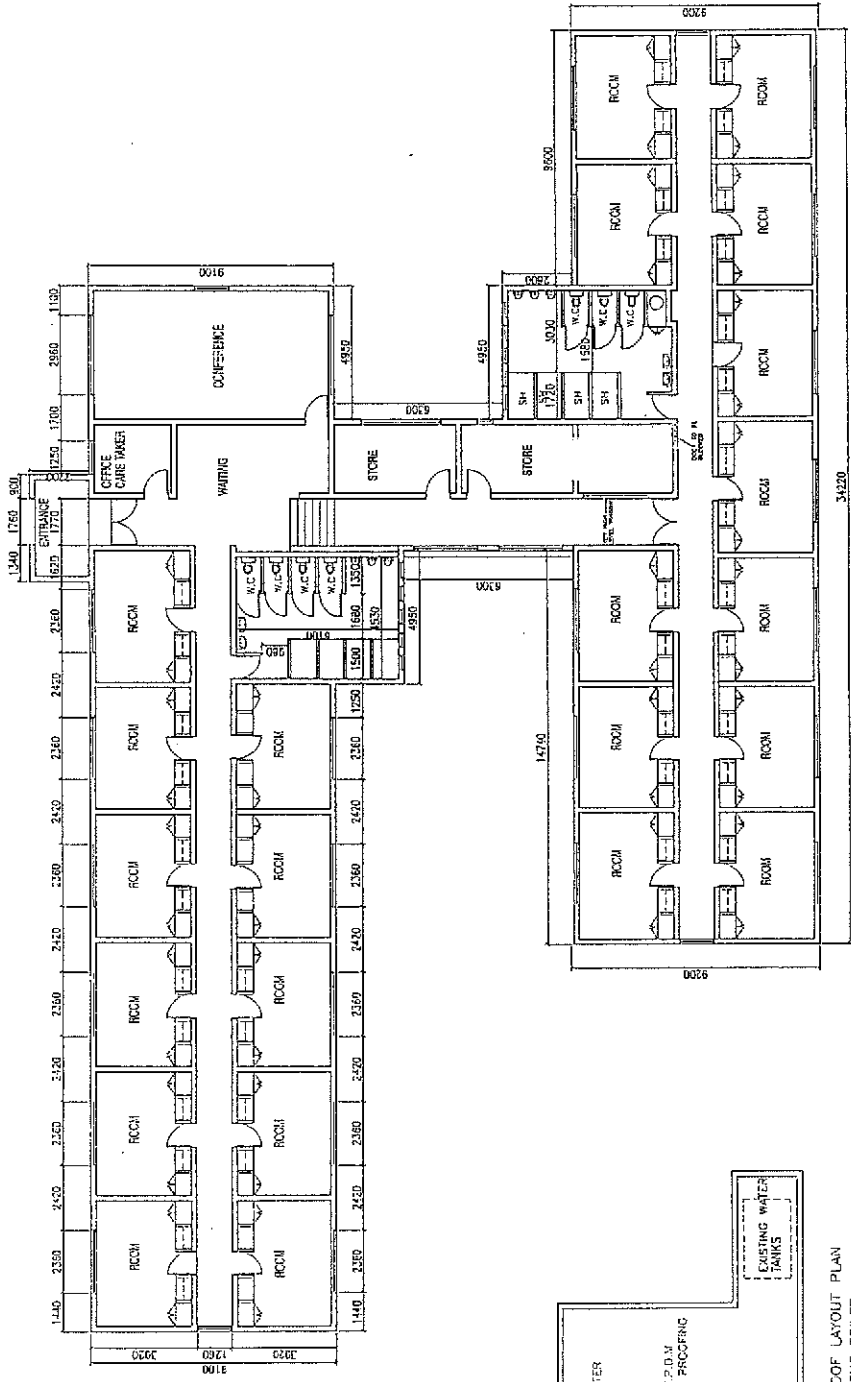
FERADON ASSOCIATES	
CONSULTANTS	
100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200	
Scale	1:100
Date	MARCH 2004
Drawn by	DAK
Checked by	DAK
Sheet No.	0401-05-16



BLOCK C
LABORATORY/CLASS ROOM

PRELIMINARY

DATE: 12 MAY 2004



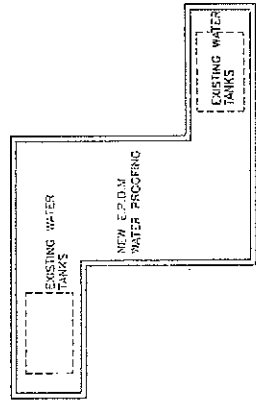
KEY

EXISTING WORK

NEW WORK

DEMOLITION

ADVANCE COPY



FLAT ROOF LAYOUT PLAN
ABOVE THE TOILET.
AREA = 71.6sqm

BLOCK F HOSTEL B

DO NOT SCALE FROM DRAWING. USE FIGURED DIMENSIONS ONLY.

CAD File Name: 56.33 L(-)-J02

Job No. 56.33

Scale 1:200

Drawing No. L(-)-J05

Rev. No.

Drawn by MUNYING

Checked

Date 13/02/04

Job Title C.E.M.A.S.T.E.A

Drawing Title HOSTEL B

TRIAD ARCHITECTS

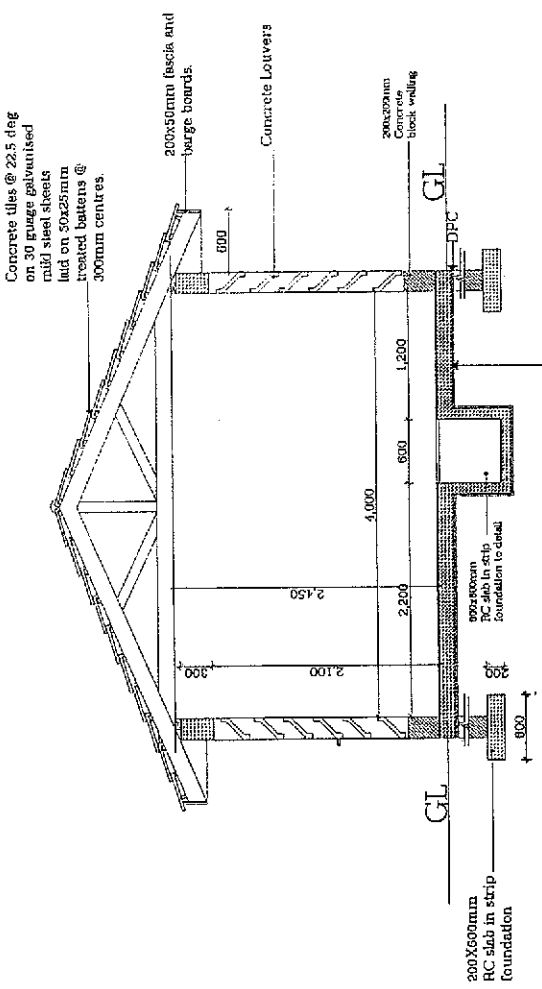
ISO 9001

UKAS

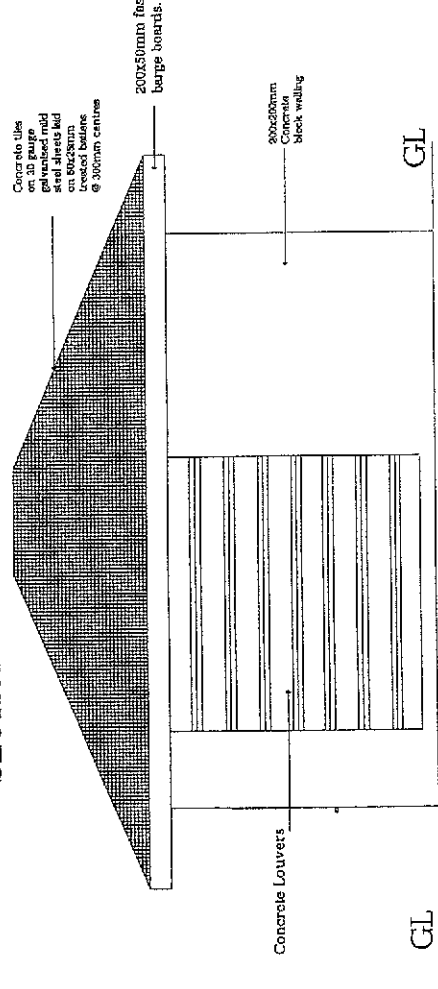
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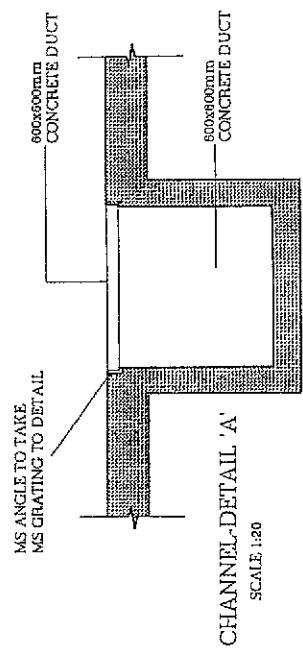
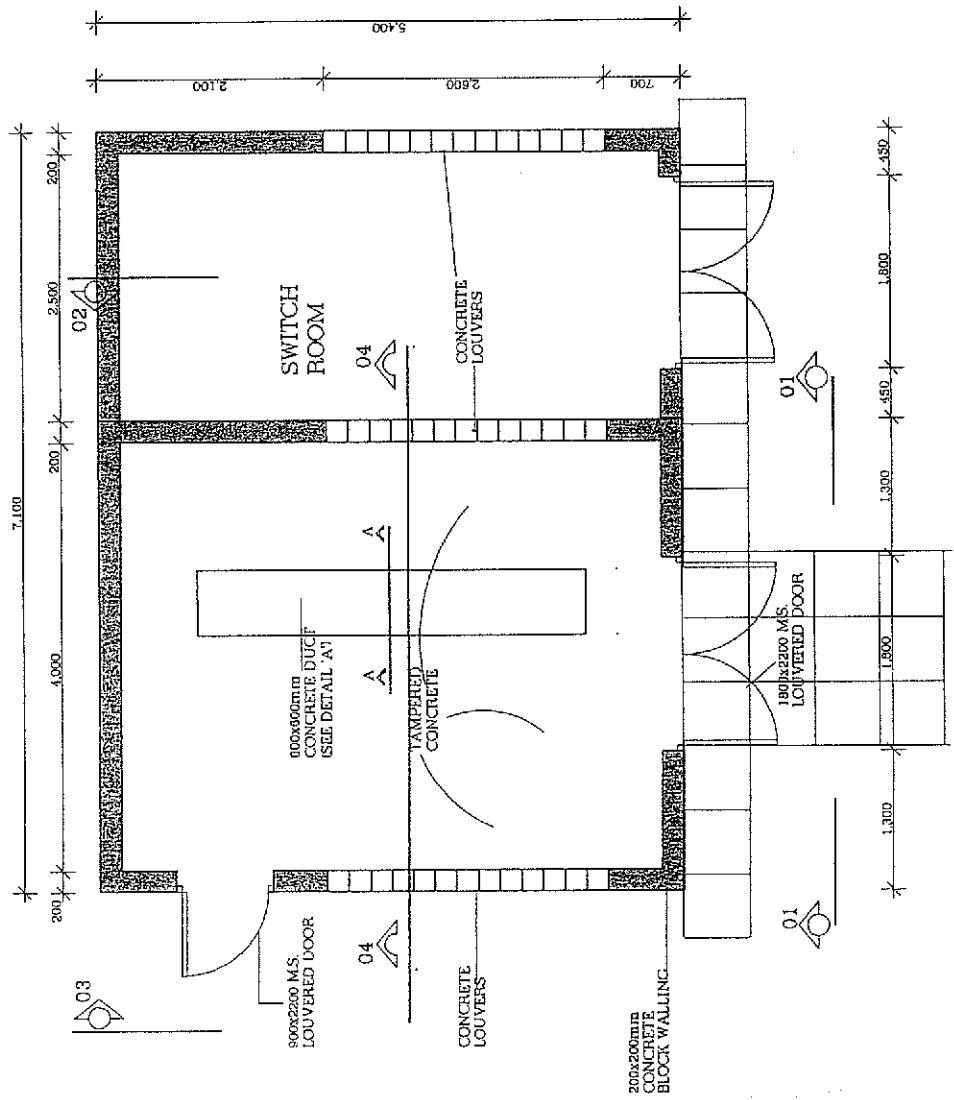
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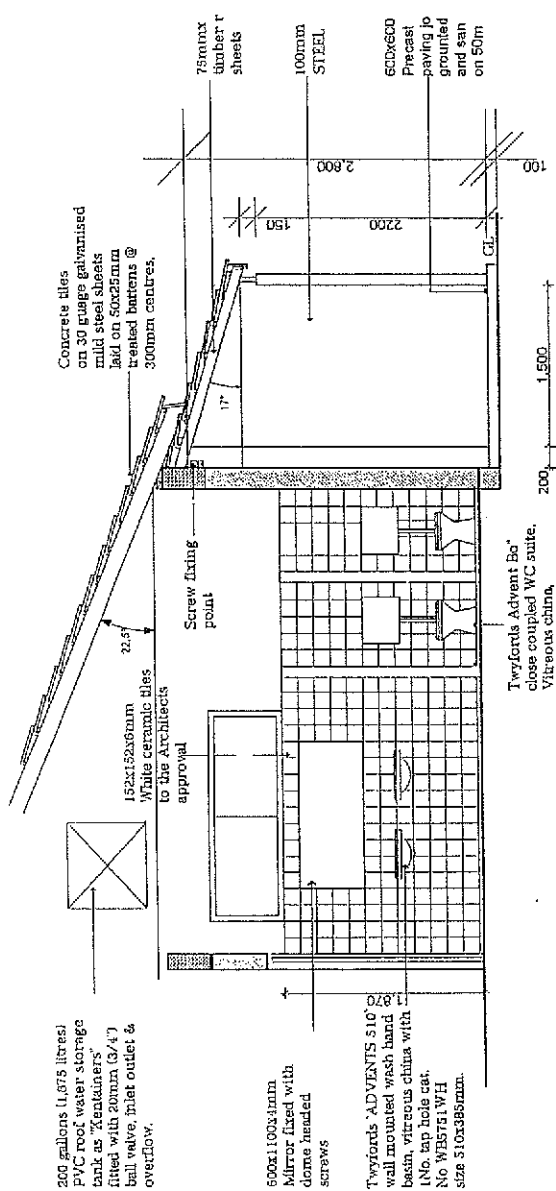
SECTION 04



ELEVATION 02



	5278U-101 TRIPLEX ENGINEERING 4000 WILSON ROAD WILSON ROAD THE STRONGHOLD SOUTH AUSTIN, TEXAS	DO NOT SCALE FROM DRAWING/DISC. FIGURED DIMENSIONS ONLY.	Job No. 5633 Scale 1:50 Drawing No. L-C-101-04 Rev. No. B Date 15-02-04



200 gallons (1,675 litres) PVC roof water storage tank as "Remainers" fitted with 20mm (3/4") ball valve, inlet outlet & overflow.

600x1000x1mm mirror fixed with dome headed screws

Twyford's "ADVENTS 510" wall mounted wash hand basin, vitreous china with 110, tap hole cat. No. WR5751 WH size 510x395mm.

Twyford's "Advent Bo' close coupled WC suite, vitreous china, cat. No AD1145WH complete with 7.5 litre cistern with seat and cover

L(73)04

DO NOT SCALE FROM DRAWING USE FIGURED DIMENSIONS ONLY.

Job Title: C.E.M.A.S.T.E.A.
Drawing Title: ROOF DETAIL BLOCK B

Job No. 5633
Scale 1:50
Drawing No. L(74-02
Rev. No.
Drawn by Makokha
Checked
Date

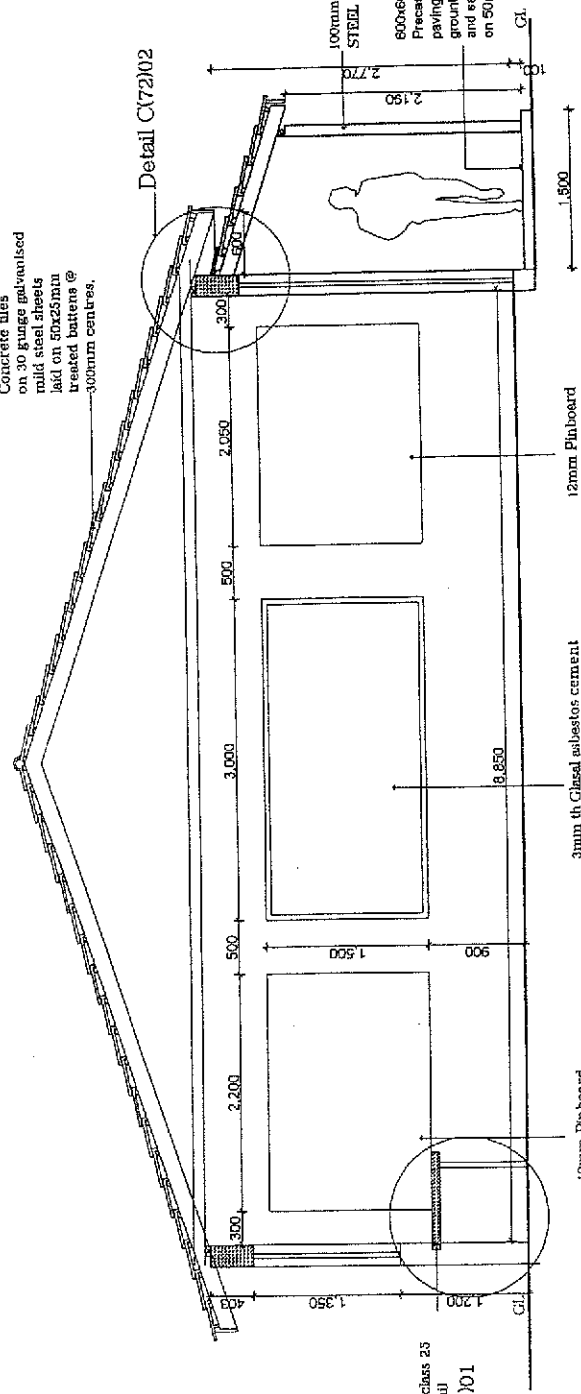
ISO 9001
UKAS
ARCHITECTS

Triad Architects

Concrete tiles
on 30 gauge galvanised
mild steel sheets
laid on 50x25mm
treated battens @
300mm centres.

Detail C(72)02

100mm DIA. MILD
STEEL COLUMN
600x600x50mm
Precast concrete
paving jointed and
grouted in lime
and sand (1:3) mortar
on 50mm bed of sand.



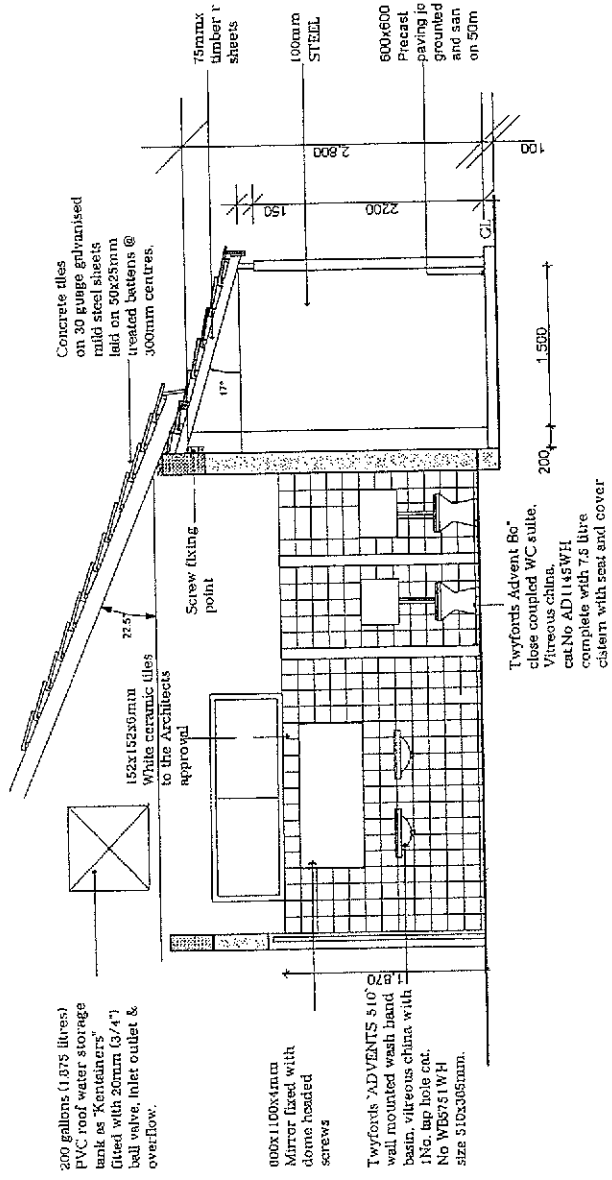
75mm th VRC class 25
workstep to detail
Detail C(72)01

3mm th Glass asbestos cement
Chalkboard manuf. by S.A.
Esternil Braille colour 92 green
faced with adhesives to plastered
wall

12mm Pinboard

12mm Pinboard

DO NOT SCALE FROM DRAWING USE FIGURED DIMENSIONS ONLY.		No.	Date
Job No. 5633	Scale 1:50		
Drawing No. L(73)-04	Rev. No.		
Drawn by Makokha	Checked	Date 12.03.04	
Job Title C.E.M.A.S.T.E.A			
Drawing Title SECTION BLOCK B			



200 gallons (1875 litres) PVC roof water storage tank as "Kentshairs" fitted with 20mm (3/4") ball valve, inlet outlet & overflow.

1000x1100x4mm Mirror fixed with dome-headed screws

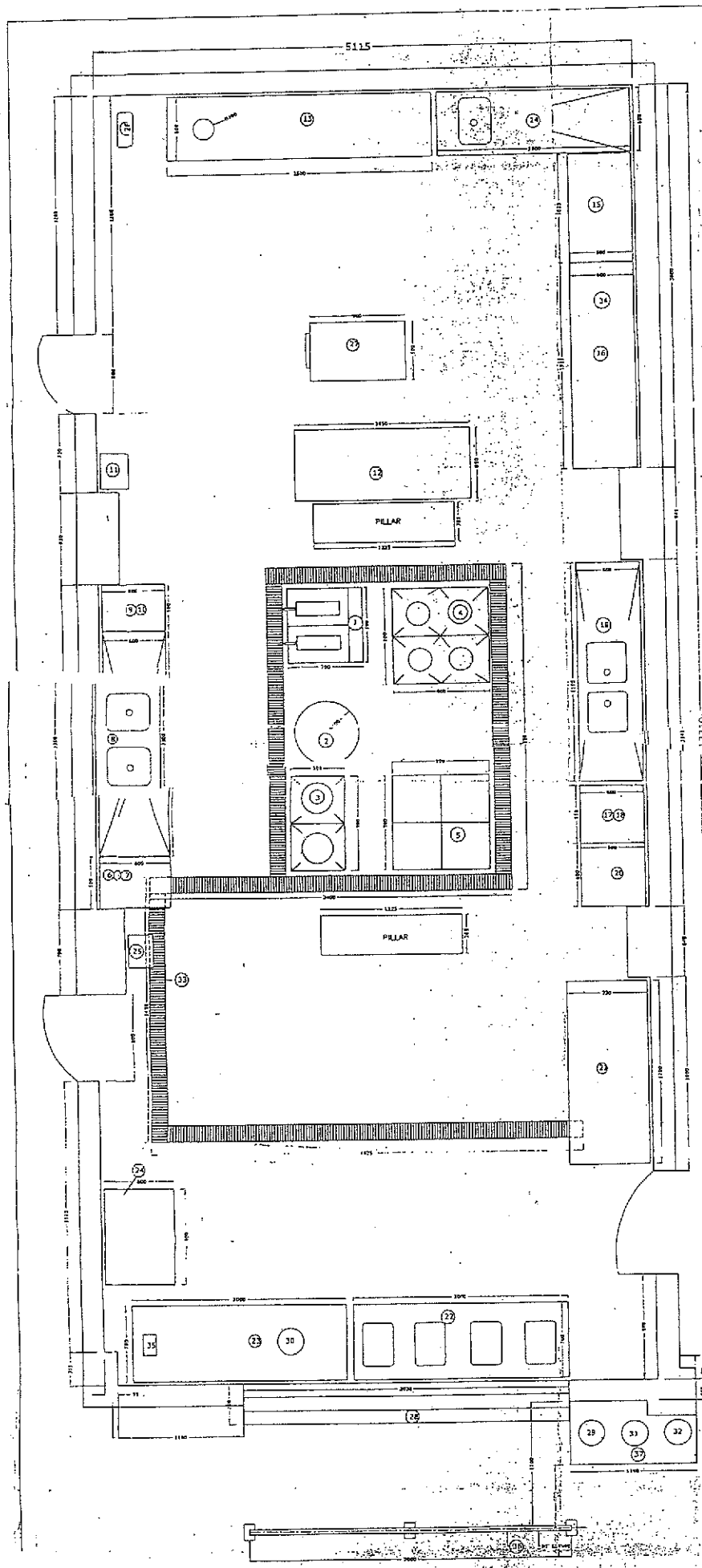
Twyford's ADVENTS 810'02' wall mounted wash hand basin, vitreous china with 1 No. tap hole cut. No WBS731WH size 510x365mm.

Twyford's Advent Bc' close coupled WC suite, vitreous china, cat No AD1145WH complete with 7.5 litre cistern with seat and cover

L(73)04

C.E.M.A.S.T.E.A Roof Detail Block B		Job No. 5633 Drawing No. L(74-02)	Date Checked by Makokha	No. Scale 1:50 Rev. No.
DO NOT SCALE FROM DRAWING USE FIGURED DIMENSIONS ONLY				
TRIAD ARCHITECTS 33 TROBROOK ROAD WILLOWBROOK, N.W. 15 TEL: 2745024/5 FAX: 2745214/5 JOHN BURGESS ISO 9001 QUALITY ASSURED		SPSL(-)01 TRIAD NORTH 33 TROBROOK ROAD WILLOWBROOK, N.W. 15 TEL: 2745024/5 FAX: 2745214/5 JOHN BURGESS		

資料 既存厨房機器配置図及び機器リスト



ALL DIMENSIONS IN IN UNLESS STATED OTHERWISE

NOTES

No.	QTY.	DESCRIPTION	DIMENSIONS	MAKE	NOTE
1	1	STAINLESS STEEL SINK	1110-800-840	ASL	-
2	1	30" BOILER	30" x 30" x 12"	ASL	-
3	1	REFRIGERATOR	30" x 30" x 36"	ASL	-
4	1	REFRIGERATOR	30" x 30" x 36"	ASL	-
5	1	REFRIGERATOR	30" x 30" x 36"	ASL	-
6	1	REFRIGERATOR	30" x 30" x 36"	ASL	-
7	1	REFRIGERATOR	30" x 30" x 36"	ASL	-
8	1	REFRIGERATOR	30" x 30" x 36"	ASL	-
9	1	REFRIGERATOR	30" x 30" x 36"	ASL	-
10	1	REFRIGERATOR	30" x 30" x 36"	ASL	-
11	1	REFRIGERATOR	30" x 30" x 36"	ASL	-
12	1	REFRIGERATOR	30" x 30" x 36"	ASL	-
13	1	REFRIGERATOR	30" x 30" x 36"	ASL	-
14	1	REFRIGERATOR	30" x 30" x 36"	ASL	-
15	1	REFRIGERATOR	30" x 30" x 36"	ASL	-
16	1	REFRIGERATOR	30" x 30" x 36"	ASL	-
17	1	REFRIGERATOR	30" x 30" x 36"	ASL	-
18	1	REFRIGERATOR	30" x 30" x 36"	ASL	-
19	1	REFRIGERATOR	30" x 30" x 36"	ASL	-
20	1	REFRIGERATOR	30" x 30" x 36"	ASL	-
21	1	REFRIGERATOR	30" x 30" x 36"	ASL	-
22	1	REFRIGERATOR	30" x 30" x 36"	ASL	-
23	1	REFRIGERATOR	30" x 30" x 36"	ASL	-
24	1	REFRIGERATOR	30" x 30" x 36"	ASL	-
25	1	REFRIGERATOR	30" x 30" x 36"	ASL	-
26	1	REFRIGERATOR	30" x 30" x 36"	ASL	-
27	1	REFRIGERATOR	30" x 30" x 36"	ASL	-
28	1	REFRIGERATOR	30" x 30" x 36"	ASL	-
29	1	REFRIGERATOR	30" x 30" x 36"	ASL	-
30	1	REFRIGERATOR	30" x 30" x 36"	ASL	-
31	1	REFRIGERATOR	30" x 30" x 36"	ASL	-
32	1	REFRIGERATOR	30" x 30" x 36"	ASL	-
33	1	REFRIGERATOR	30" x 30" x 36"	ASL	-
34	1	REFRIGERATOR	30" x 30" x 36"	ASL	-
35	1	REFRIGERATOR	30" x 30" x 36"	ASL	-

ASSOCIATED STEEL LTD
 P.O. BOX 18689, TEL: 001201848
 MADRID - KENTIA
 TITLE: KITCHEN LAYOUT
 DRAWING NO: 1001/201848
 FINAL REVIEW DRAWING
 CLIENT: S.C. MATEO (PARIS) - MEXICO PLANT

1 ALL DIMMENSIONS IN MM UNLESS STATED OTHERWISE

NOTES

37	1	SS SERVING TABLE WITH U/S	1140*600*860	ASL	-
36	1	SS RAILING	DIA. 2" 3000 LG.	ASL	-
35	1	MICROWAVE OVEN		IMPORTED	0.9 KW
34	1	DIAL INDICATOR BENCH SCALE	0-25KGS	IMPORTED	-
33	1	FLOOR GRATTING	150 WIDE	ASL	-
32	1	COFFEE MAKING MACHINE	2 LTRS/5MIN.	IMPORTED	
31	1	MILK URN	CAPACITY 27 LTRS	ASL	3KW
30	1	COFFEE URN	CAPACITY 27 LTRS	ASL	3KW
29	1	TEA URN	CAPACITY 27 LTRS	ASL	3KW
28	1	TRAY SLIDE	3000*250	ASL	-
27	1	FOOD TROLLEY -3 TIER	900*500*900	ASL	-
26	1	PLATFORM WEIGHING SCALE	150 KGS	IMPORTED	-
25	1	INSECTOCUTOR		IMPORTED	1.6KW
24	1	CUTLERY RACK -3 TIER	900*600*1600	ASL	-
23	1	HOT CAPBOARD (ELECTRICAL)	2000*700*900	ASL	1.5KW
22	1	BAINMARIE (ELECTRICAL)	2000*700*900	ASL	8KW
	1	CHICKEN GRILL-8KW	1700*730*1500	ASL	3HP
20	1	MEAT CHOPPING BLOCK	600*600*860	ASL	-
19	1	D.B.D.D SINK UNIT	2350*600*860	ASL	-
18	1	MEAT SLICING MACHINE	250MM BLADE	IMPORTED	0.22KW
	1	TABLE FOR MEAT SLICING M/	550*600*860	ASL	-
16	1	SS WORK TOP WITH U/S	1925*600*860	ASL	-
15	1	CUTLERY RACK - 3TIER	1025*600*1600	ASL	-
14	1	S.E.S.D SINK UNIT WITH U/S	1800*600*860	ASL	-
13	1	SS DUMP TABLE WITHOUT U/S	2500*600*860	ASL	-
12	1	CHEST TYPE FREEZER CABINET	600 LTRS NET	IMPORTED	0.2 KW
11	1	MIXING MACHINE	20 LTRS CAPACITY	IMPORTED	1.1KW
10	1	TABLE FOR CHIPPER	500*600*860	ASL	
9	1	POTATO CHIPPER (ELECCTRIC)	MAX. 18KG/MIN.	IMPORTED	0.25KW
8	1	D.B.D.D SINK UNIT WITH U/S	2300*600*860	ASL	
7	1	TABLE FOR POTATO PEELER	500*600*860	ASL	-
6	1	POTATO PEELER	12 KG/CHARGE	IMPORTED	0.6KW
5	1	ELECTRIC COOKING RANGE	900*900*860	ASL	18KW
4	1	GAS COOKING RANGE (L.P)	900*900*860	ASL	-
3	1	STOCK POT STOVE (GAS L.P)	900*500*520	ASL	-
2	1	BOILING PAN (GAS)	DIA.600*860	ASL	-
1	1	DEEP FAT FRYER (GAS L.P)	700*700*860	ASL	-
No.	QTY.	DESCRIPTION	DIMENSIONS	MAKE	POWER CONS

ASSOCIATED STEEL LTD
P.O BOX 18639, TEL: (02)351843
NAIROBI - KENYA

TITLE:
KITCHEN LAYOUT
DRAWING
FINAL REVISED DRAWING

	NAME	SIGN	DATE
DESIGNED			
DRAWN	KABURU		28/09/04
CHECKED			
APPROVED	Mr.MURALI		
SCALE: 1:20			
			ACAD FILE:1008
SMS HFD 0001			

CLIENT: C.E.M.A.S.T.E.A (THROUGH VOLCANIC PLUMBERS)

資料 既存井戸データ

04/302/NWO

23rd June 2005

Triad Architects
PO Box 30725
NAIROBI - 00100

Attn: Mr. James Gitoho

Dear Sir,

Cemastea Karen, Nairobi – New Borehole Yield

In response to your e-mail of 11th February 2005 on the yield of the new borehole, we organized a meeting on 16th February 2005 on site with the NK Brothers, Agro Irrigation & Pump Services Ltd, Mr. Mwai of Cemastea and ourselves at which the functioning of the new borehole was explained to Mr. Mwai and he confirmed his understanding of the explanations.

The yield of the new borehole is 2.8m³/hr. Initially; the drilling contractor had reported a yield of 10m³/hr., based on a test pumping report that was found to be defective when a repeat test pumping was carried out under our supervision. Mr. Mwai explained that he had not been made aware of the low borehole yield after the second test pumping.

After the repeat test pumping, we recommended the installation of one submersible pump, Grundfos SP5A-44 at 240m below ground level.

At 240m below ground level, the capacity of the installed pump is 2.4m³/hr.

The capacity of the existing main storage tank is 43m³. The main storage tank is a braithwaite tank of 4panels long x 3 panels long x 2 panels high. Each panel is 4 ft long.

The new borehole pump will need to operate for 18 hours in order to fill the existing main storage tank. This will only be possible if the outlet from the tank is also turned off during the 18-hour pumping period. The user however explained that due to the constant demand for water, it was not possible to turn of the tank outlet for such a long time.

Please let us know if you require any additional information.

Yours faithfully

Nathaniel Omwolo Matalanga

04/302/NWO

26th November 2004

NK Brothers Ltd
PO Box 10709
NAIROBI - 00100

For: Mr. Pravin M. Khoda

Dear Sir,

Cemastea Karen, Nairobi – Borehole Pump

We confirm receipt of the 2nd test pumping report and also confirm having supervised the second test pumping.

Based on the results of the second test pumping, we recommend: -

- a) Installation of one submersible pump, Grundfos SP 5A-44 at 240m below ground level
- b) One control panel for Grundfos SP 5A-44
- c) 38mm (1 1/2") dia galvanised steel pipe, heavy duty Class C and high-pressure steam sockets
- d) 25mm dia uPVC dipper tube
- e) Electrical submersible cable 3 phase 4mm² and
- f) Electrode pair and 0.75mm² electrode cable.

Please let us know when you intend to install the pump to enable us supervise the installation.

Yours faithfully,



Nathaniel Omwolo Matalanga
NGASI CONSULTING ENGINEERS

Copies *Triad Architects,* *Attn: Mr. James Gitoho*
 Armstrong & Duncan, *Attn: Mr. Walter Odundo*
 Feradon Associates, *Attn: Mr. Nick Gumbo*

PUMP

GRUNDFOS submersible pumps are designed for a wide range of uses with a particular application to borehole supply. They are of multistage centrifugal impeller design and all parts are made from stainless steel with water lubricated rubber bearings. A submersible motor is fitted beneath the pump and suction is effected through a strainer between the pump and motor.

Standard pumps are designed for the pumping of non-aggressive water. An 'N' version is available for applications requiring a higher degree of corrosion resistance.

MOTOR

The pump is coupled to a sealed, liquid cooled 2-pole asynchronous squirrel-cage GRUNDFOS motor constructed of stainless steel. Single phase motors are supplied complete with purpose designed control boxes, while three phase motors require a remote Direct-on-Line starter. If unstable supply voltage is likely an additional quick tripping control relay is recommended.

Enclosure Class: IP58 **Insulation Class:** B **Speed:** 2900 rpm

OPERATING CONDITIONS

Pumped Liquid: Thin, clean, chemically non-aggressive liquids without solid particles or fibres.

Max Liquid Temperature: +40°C.

Max Water Depth: Up to 1.5 kW 1 ph and 2.2 kW 3 ph - 150 m
2.2 & 3 kW 1 ph and 3 & 4 kW 3 ph - 600 m

Minimum Borehole Diameter: 110mm

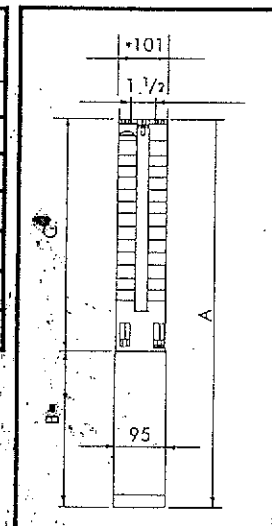
ELECTRICAL DATA

Pump Type	Motor		Full Load Current (A)		Start Current (A)	
	kW	HP	1x240 V	3x415 V	1x240 V	3x415 V
SP 5A-8	0.75	1.0	7.0		26	
SP 5A-12	1.1	1.5	7.1	3.7	31	16
SP 5A-17	1.5	2.0	9.8	4.4	38	21
SP 5A-25	2.2	3.0	14.0	5.7	62	26
SP 5A-33	3.0	4.0		7.9		35
SP 5A-44	4.0	5.5		9.6		46

DIMENSIONS AND WEIGHT

Pump Type	Dimensions (mm)					Net Weight [kgs]	
	C	B		A		1x240 V	3x415 V
		1x240 V	3x415 V	1x240 V	3x415 V		
SP 5A-8	324	306		630		13	
SP 5A-12	408	346	306	754	714	15	13
SP 5A-17	513	346	346	859	859	17	16
SP 5A-25	681	573	346	1254	1027	28	19
SP 5A-33	849		493		1342		26
SP 5A-44	1124		573		1697		38

* Maximum diameter of the pump inclusive of cable guard and motor



NB. Contents herein are not warranted. The right is reserved to amend specifications without notice.

AVAILABLE FROM _____

BG2b/4/97



Agro Irrigation & Pump Services Limited

P.O. Box 32111, 00600 - Nairobi, Kenya, North Airport Road, Embakasi

Tel. (+254 20) 6751028 (pilot line), 6751083/86/89, 6751157/91/99

Telefax: 6751042, E-mail: agro@iconnect.co.ke, agroirrigation@wananchi.com

04/302

NWO 26/10/04

NGASI CONSULTING ENGINEERS

ATTN: ENGINEER NATHANIEL MATALANGA

CONCLUSIONS:

1. The aquifer struck at 295m which was the main aquifer is not the pressure aquifer for the borehole as it is unable to increase the discharge with increase in draw down.
2. The discharge of 2.8m³/hr was almost stable for the last 7 hours of pumping.
3. The borehole has a safe water column of 35.39m from the deepest water pumping level to the total depth of the borehole when pumping 2.88m³/hr
4. The above water column is enough to install all the safety precautions of the submersible pump.
5. The test pumping was carried out with submersible pump SP8A50 with its intake at 290m deep.

RECOMMENDATIONS:

1. That the recommended submersible pump is SP5A 60 which should be installed in the borehole with all the necessary security precautions.
2. That for the first one hour of pumping the pump will give 5,500litres per hour with the lowest being 2880 litres per hour after prolonged pumping.
3. That the borehole has a submersible pump chamber (286-292m) within the plain casing
4. The pump intake level at 290m should therefore be used for any future pump installation
5. The (4) above will leave 20meters to bottom of borehole as sand collection chambers, which is adequate.

MARKETING DIRECTOR

DINESH HALAI



METZERTOP



VALIKO GREENHOUSES



GAVISH
control systems



ALLWEILER
FARM PUMPS



REPUBLIC OF KENYA
 MINISTRY OF WATER RESOURCES MANAGEMENT AND DEVELOPMENT

Borehole No: C-14180
 Borehole Name: C.E.M.A.S.T.E.A
 Formation: Volcanic

1	Locations:	Karen Centre	Nairobi	District
	Map Sheet:	148/4	Scale:	1:50000
	Area:	Karen Centre	Co-ordinates:	01° 21' 42" S
		area of Nairobi		36° 45' 42" E
		(See sketch page 4)	Elevation:	1790 m above sea level
2	Owner:	Centre for Mathematic, Science & Tech, Education in Africa	Address:	
	Locality/Estate:	Karen Centre	L.R. No:	1160/16R
	Intended Use:-	Public W.S; Irrig; Indust; Domestic; Stock; Other:	Institutional	
3	Contractor:	Agro Irrigation and Pump Services Ltd	Address:	P.O. Box 32111, Nairobi
	License No:	DB400/104	Granted on:	19/09/92
	Drilling Supervisor:			P. J. Gupararia
4	Type of Borehole:	Drilled; Driven; Bored; Jetted; Other:		Drilled
	Type and make of Drilling Rig:			Agrotech
5	Borehole Construction (also see sketch page 3):			
	Drilling Started:	26/6/2004	Drilling Completed:	28/6/2004
	All Work Completed:			30/6/2004
	Total Depth: Reported	310 m	Measured:	310 m
	Final (Backfilled) depth:			310
	Hole Diameter:	254 mm	From:	0 m
	Hole Diameter:	216 mm	From:	3 m
	Permanent Casings:			
	Plain:			
	Type: Steel Diam:	mm	Length:	m
	See Sketch of Final Borehole Construction		from	m to m
			from	m to m
			from	m to m
			from	m to m
	Slotted or Perforated:			
	Size and Description of Openings:			
	Type: Diam:	mm	Length:	m
	See Sketch of Final Borehole Construction		from	m to m
			from	m to m
			from	m to m
	Screen:			
	Type and Make:			
	Diam:	mm	Length:	m
			from	m to m
			from	m to m
			from	m to m
	Gravel Pack:			
	Size of grains:	2-4 mm	Volume inserted into annular space:	12.5 Tons
	Roundedness: (good, fair, poor)	Good	from	310 m
	Open Hole:		to	0 m
	Diameter:	152 mm	from	- m
			to	310 m
6	Aquifer:			
	1st Water Struck at	92 m	Water rest level	77.83 m
	Main Aquifer Struck	295 m	Water rest level	m
	Water bearing Material:			
	Trachytic agglomerates		from	286 m to 310
			from	m to m
	Other Aquifers, remarks etc:	Other water struck levels at 130m and 266 metres		

77.83 m PWL: 229.51 m Discharge: 100 lpm
 pumping 24 hours Recovered SWL in 120 minutes
 recommended production discharge 3600 lph with pump set at 260 m below surface

Pumping Test Record - in summary (Detailed test records on attached sheets)

All depth measurements are in metres below ground surface

	Test No. 1	Test No. 2
Date of Test (day, month, year)	29/6/04	
Depth of Borehole at time of test	310 metres	metres
Water entry (perforations or screen at time of test)	from 292 m to 304 m	
Static Water Level before test	77.83 metres	metres
Type of pump (or Bailer) used	Submersible	
Depth of pump intake	245 metres	metres
Discharge (in litres per minute)	100 lpm	lpm
Pumping Water Level (PWL)	229.51 metres	metres
After pumping continuously for	24 hours	hours
Time of Recovery to Original SWL	120 minutes	minutes
Rate of Recovery - WL after 5 mins	224.14 metres	metres
20 mins	212.22 metres	metres
60 mins	183.65 metres	metres
180 mins	metres	metres

(Additional pumping tests to be mentioned in REMARKS and included with file)

Government representative witnessing the test:

9 Quality of Water:

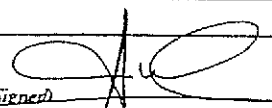
Sample: Yes Yes/No Collected at 23rd hours on 30/6/04
 Sediment Clear Taste Good Odour Nil
 Colour Nil Temperature °C Spec. Cond. uS/cm

Remarks:

(drilling difficulties, gravel pack details, all relevant information about the drilling and completion of the hole)

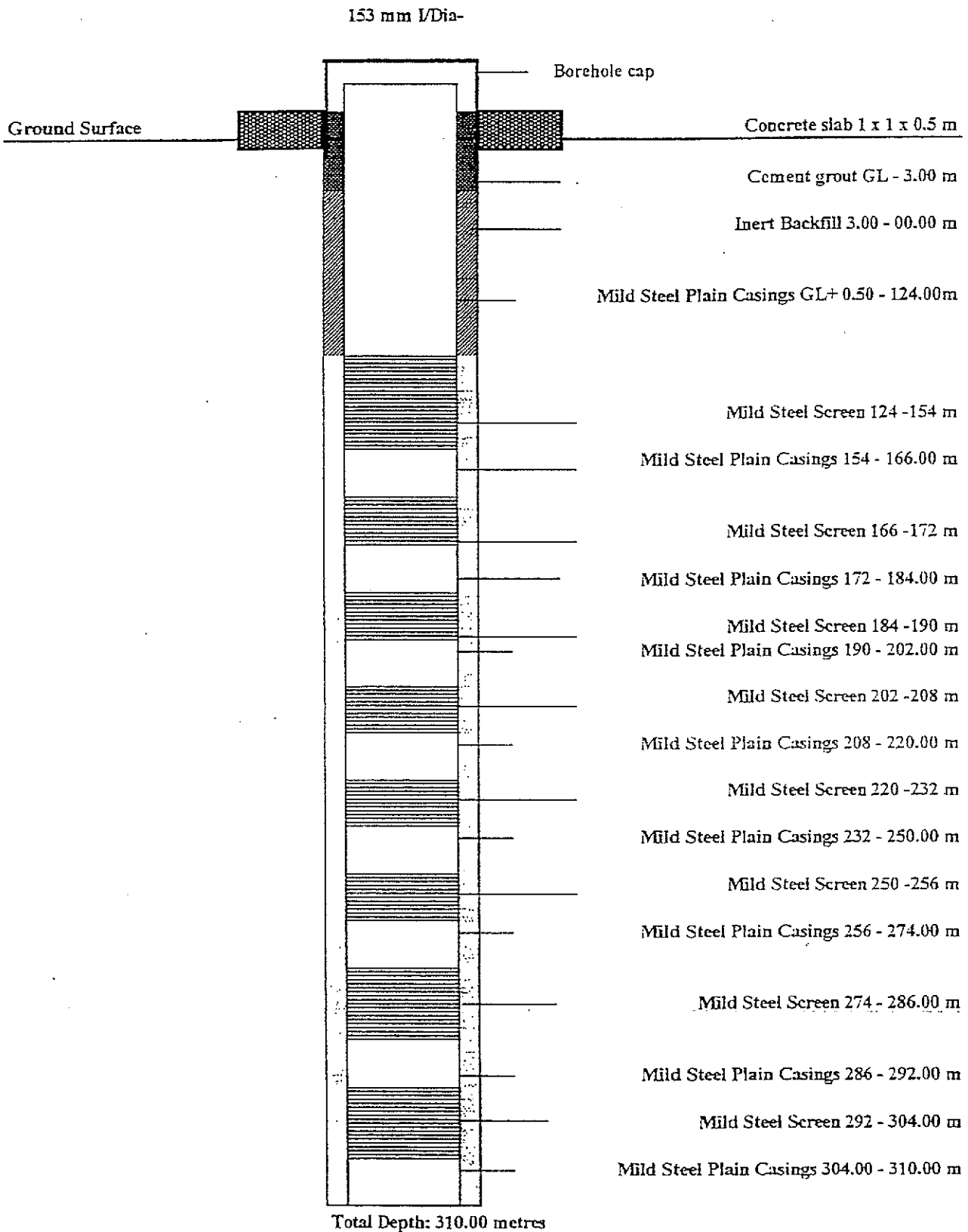
1. No drilling difficulties.

(Signed) _____
 Drilling Supervisor

(Signed) 

Drilling Contractor
AGRO IRRIGATION & PUMP SERVICES LTD.
 P. O. Box 27575 - 00506
 NAIROBI, Kenya.

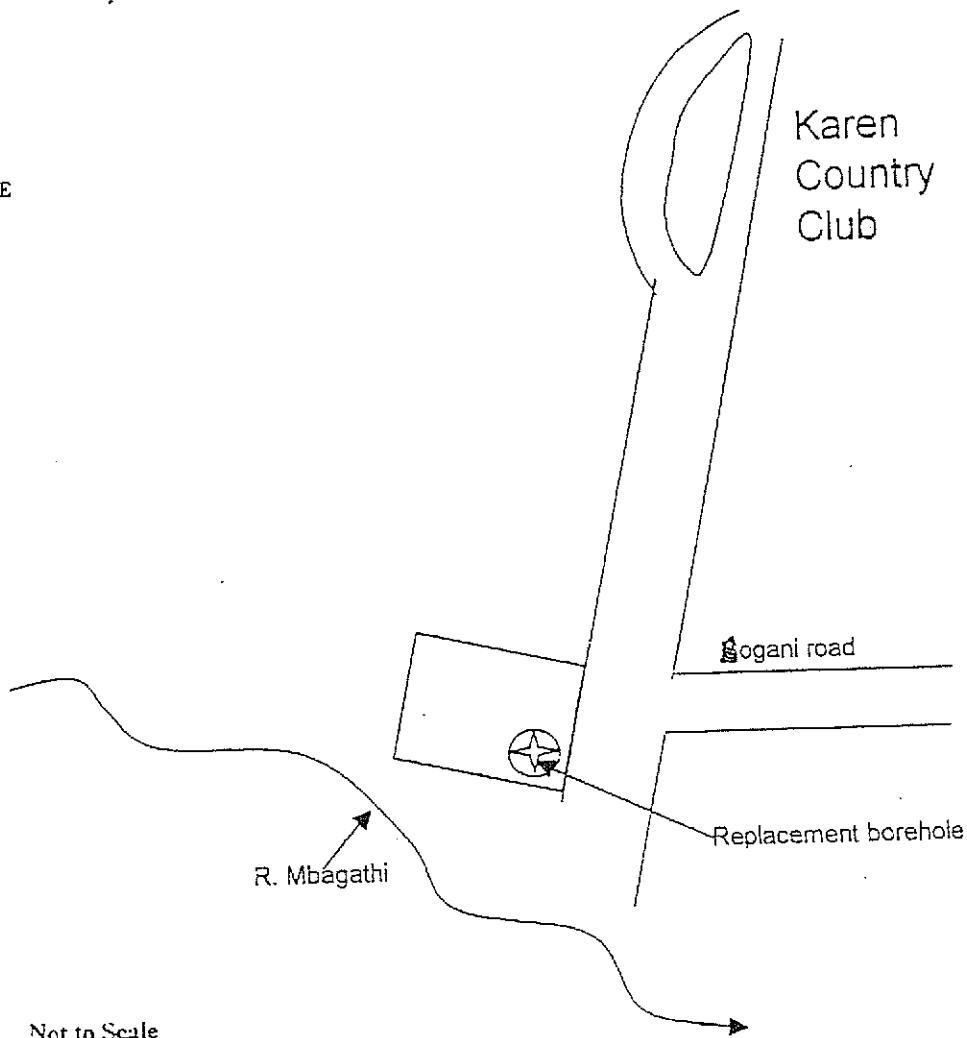
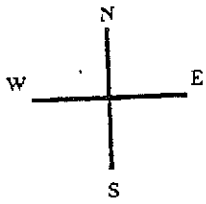
12. Sketch of Final Borehole Construction:



Sketch to include:- depth and changes of hole diameter; casing positions, manner of casing connections (of different diameters) and casing connection to screen; depths of screens or slotted casing lengths; how casing is closed at bottom; formation casing zones; and any other pertinent information

13 Location Sketch:

(To be sketched by the driller on the site, showing roads, tracks, and prominent landmarks, with road distances to nearest town or trading centre and to water source).



Not to Scale

For Official Use Only

Entered on Schedule (Yes/No)
 Drilling Samples Received (Yes/No)
 Drilling Samples Filed (Yes/No)
 Location Plotted on Maps (Yes/No)

Water Sample Received (Yes/No)
 Chemical Analysis Received (Yes/No)
 Geologist's Log Available.. .. (Yes/No)

Hydrogeological Report No:.....of.....

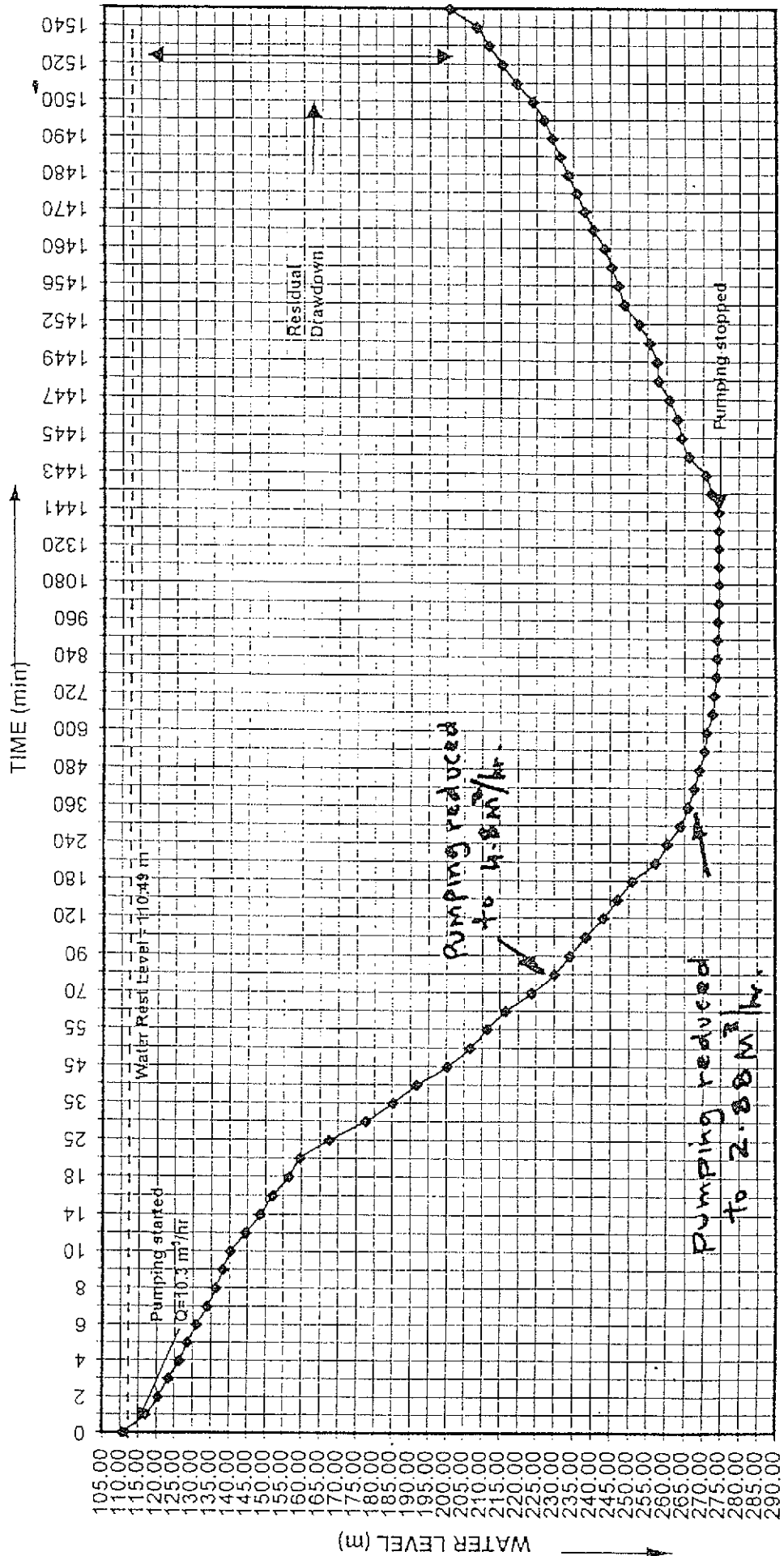
Geophysical Curve No:.....of.....

Borehole Data entered and checked by (Name)..... Signature.....

All Completion Report Forms duly completed should be sent to:-

DRILLING SECTION,
 MINISTRY OF WATER RESOURCES MANAGEMENT AND DEVELOPMENT
 P.O. BOX 30521,
 NAIROBI

CONSTANT DISCHARGE TEST - C
C.E.M.A.S.T.E.A - KAREN CENTRE - AREA OF NAIROBI



N.B REDUCTION DUE TO PERFORMANCE OF THE PUMP (CURVES) ATT.

資料 KSTC 内事務所棟現地入札資料



SUMITOMO CONSTRUCTION CO., LTD.

P.O. Box 60487 Nairobi, Kenya
Telephone: 722690, 722560 Fax: 722619
Email: sumicon@iconnect.co.ke

REF: SCC/N/2001/218

DATE: 4th October 2001

The Co-coordinator,
Smasse Project JICA Office,
P. O. Box 50572,
NAIROBI.

Attention: Mr. Naganuma Keiichi

Dear Sir,

RE: QUOTATION FOR THE PROPOSED SMASSE OFFICE BUILDING AT KSTC.

We have the pleasure in submitting to you our Quotation for the above captioned work. The total amount of the work will be **Kshs. 21,570,900.00 (Kenya shillings Twenty One Million, Five Hundred Seventy Thousand and Nine Hundred Only)** as per the attached details.

The above quotation does not include Value added Tax (VAT).

The construction period will be five (5) months.

We hope our quotation will receive a favorable reply.

Yours faithfully,

SUMITOMO CONSTRUCTION CO., LTD.

for

M. OGAWARA / GENERAL MANAGER.

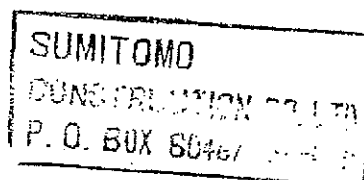
Encl.

SUMITOMO CONSTRUCTION CO. LTD

PROJECT NAME : Proposed SMASSE office at KSTC

No.	DESCRIPTION	COST/Kshs
A	Earth Works	308,800.00
B	Structure Works	3,688,500.00
C	Roofing Works	3,039,600.00
D	Finishing Works	6,919,100.00
E	Plumbing and Sanitary Works	1,077,200.00
F	Electrical Works	1,799,200.00
G	Site Work and Landscaping (Incl. Road Works)	2,470,200.00
H	Car parking	307,300.00
	DIRECT COST TOTAL	19,609,900.00
	INDIRECT COST	1,961,000.00
	TOTAL of Construction Cost	21,570,900.00

Exclude 18% VAT

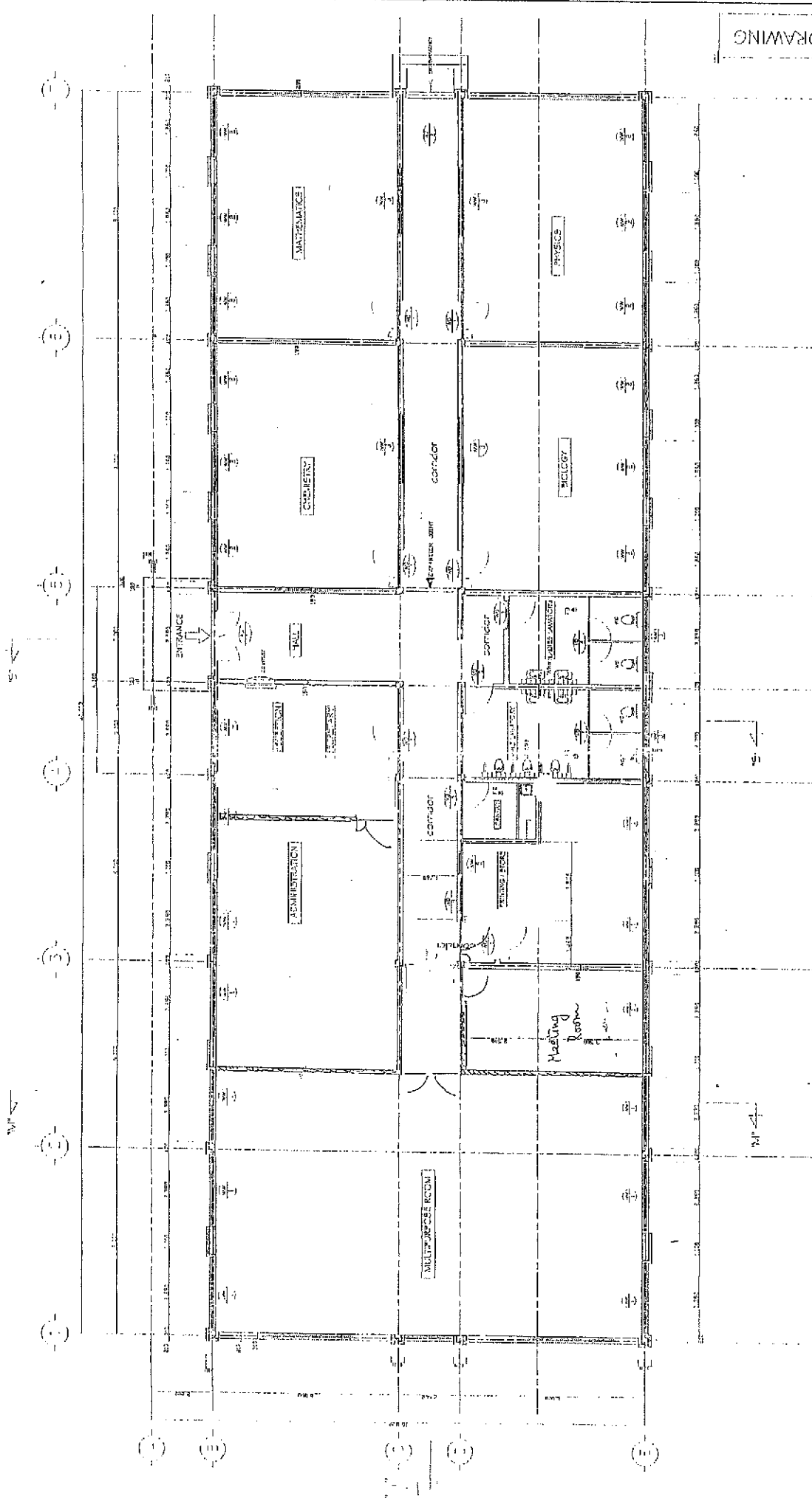


NO	DESCRIPTION	UNIT	QTY	MATERIAL(KSHS)		LABOUR(KSHS)		TOTAL(KSHS)	
				RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT
G SITE WORKS & LANDSCAPING (INC. ROAD WORKS)									
I)LANDSCAPING ,PAVEMENTS AND OTHER MISCELLANEOUS WORKS									
a)	Transplanting of grass,including provision and laying of 100mm thick topsoil.	m ²	150.00	1,000.00	150,000.00	500.00	75,000.00	1,500.00	225,000.00
b)	Indegenous trees 1M high	No	4.00	1,500.00	6,000.00	500.00	2,000.00	2,000.00	8,000.00
c)	Planting of selected flower shrubs to client approval	m ²	20.00	1,000.00	20,000.00	500.00	10,000.00	1,500.00	30,000.00
d)	kerb stone (125 x 125)	m	120.00	1,200.00	144,000.00	800.00	96,000.00	2,000.00	240,000.00
e)	Ballast filling (t 100)	m ²	120.00	600.00	72,000.00	200.00	24,000.00	800.00	96,000.00
II)WALKWAY PAVEMENT									
a)	Excavation	m ³	43.50			200.00	8,700.00	200.00	8,700.00
b)	cart away from site	m ³	43.50			200.00	8,700.00	200.00	8,700.00
c)	hardcore fill	m ³	43.50	600.00	26,100.00	150.00	6,525.00	750.00	32,625.00
d)	Kerb stone	m	145.00	650.00	94,250.00	200.00	29,000.00	850.00	123,250.00
e)	retaining mass concrete	m ³	6.00	4,500.00	27,000.00	2,000.00	12,000.00	6,500.00	39,000.00
f)	sand leveling incl. Pointing	m ²	145.00	500.00	72,500.00	300.00	43,500.00	800.00	116,000.00
g)	paving slabs (585x585)	No	435.00	600.00	261,000.00	100.00	43,500.00	700.00	304,500.00
									1,231,775.00
SUB TOTAL									

SUMITOMO
CONSTRUCTION CO. LTD
P. O. BOX 6048/ NAIROBI

PROPOSED SMASSE BUILDING AT KSTTC NAIROBI									
SUMMARY									
	Direct cost total								19,609,900.00
A	Earth works							308,800.00	
	I) Excavations & Miscellaneous items						308,800.00		
B	Structure works							3,688,500.00	
	I) Concrete works						2,051,625.00		
	II) Form works						466,875.00		
	III) Reinforcement						1,170,000.00		
C	Roofing works							3,039,600.00	
	I) Roof works						3,039,600.00		
D	Finishing works							6,919,100.00	
	I) Wallings						976,600.00		
	II) Plaster & Floor finishes						1,196,133.50		
	III) Paint finishes						368,300.00		
	IV) Finishes to ceiling & eaves						1,775,600.00		
	V) Joinery works						380,500.00		
	VI) Windows						1,862,466.50		
	VII) Metal works Entrance Hall						359,500.00		
E	Plumbing and Sanitary works							1,077,200.00	
	I) Plumbing & Sanitary						942,800.00		
	Electrical works							1,799,200.00	
	I) Electrical works						1,799,200.00		
G	Site works & Landscaping (Inc. Road works)							2,470,200.00	
	I) Landscaping, Pavements and other Miscellaneous works						599,000.00		
	II) Walkway pavement						632,775.00		
	III) Preliminary earthworks						90,200.00		
	IV) Access Road						1,148,225.00		
H	Car parking							307,300.00	
	I) Car park canopy						307,300.00		
	Indirect cost								1,961,000.00
	Total of Construction Cost								21,570,900.00

Proposed SMASSE Office



Ground floor plan

DRAFT DRAWING

APPROVED [Signature] DATE: 20/11/2019	PROJECT TITLE The Proposed SMASSE OFFICE at Kenya Science Teachers College	TITLE GROUND FLOOR PLAN	NO. SM-AD-P-01
		SCALE 1/60 1/30 1/20	ARCHITECTURAL
SUMITOMO CONSTRUCTION CO., LTD.			

資料 現地教育機材取り扱い業者リスト

教育機材取扱い業者リスト

企業名	住所 (連絡先)	電話番号	主要取扱品
Jenath Enterprises	P. O. Box 50663 Nairobi 00200	210582 0722618491, 0733800439,	事務用品、電気製品、建築資材、 実験器具、化学薬品、厨房機材
Cyan Office Supplies	P. O. Box 61203 Nairobi 00200	336193, 211345	事務用品等
Science Lab & Office Center	P. O. Box 397833 Nairobi 00800	249742, 0722749049, 0722406756	事務用品、実験器具・用品、電 気製品
SEPU	P. O. Box 25140 Nairobi 00603	559279, 564026, 0722753742	実験機材、同製作、中等教育機 材供給、事務用品、電気製品
Monks Mwdicare Africa Ltd.	P. O. Box 59362 Nairobi 00200	222195, 211870, 0722419622	化学実験機材、化学薬品
Makenga Seavices	P. O. Box 55294 Nairobi 2412881	0722863245	事務用品、中等教育教科書
MFI Office Solutions Ltd.	P. O. Box 49160 Nairobi 00100	32051000, 32051111	事務用品、コンピューターメン テナンス
Rocham Enterprises Ltd.	P. O. Box 49624 Nairobi 242272	0722974527	事務用品、建築資材、中等教育 教科書
Vitco Enterprises	P. O. Box 4118 Nairobi 00200	073375814	実験器具、化学薬品
CENDCO Laboratory Ltd.	P. O. Box 9784 Nairobi 00100	242875, 0722745626	実験器具、化学薬品
Chem - Rectic Ltd.	P. O. Box 65654 Nairobi 00607	226002, 0722745626	実験器具、化学薬品

資料 土地家屋調査書

TERMS OF REFERENCE

We received instructions from The Chief Adviser, **SMASSE PROJECT**, P.O. Box 30596, Nairobi, to carry out an open market valuation of L.R Number 1160/224,CEMESTEVA, Karen, Nairobi.

DEFINITION OF VALUE

Open Market Value

The open market value (OMV) means the best price at which the sale of an interest in property might reasonably be expected to have been completed unconditionally for cash consideration on the date of valuation assuming:-

- a) a willing seller;
- b) that, prior to the date of valuation, there had been a reasonable period (having regard to the nature of the property and the state of the market) for the proper marketing of the interest, for the agreement of price and terms and for the completion of the sale;
- c) that the state of the market, level of values and other circumstances were on any earlier assumed date of exchange of contracts, the same as on the date of valuation; and
- d) that no account is taken of any additional bid by a purchaser with a special interest.

The open market value reflects continuation of the existing use and the value may include a special element attributable to the earning potential of the premises for a particular existing purpose by reason of their nature, location, character and physical construction but such element of value, if present, exists irrespective of the benefit for the property to the particular individual undertaking of which it forms a part.

LIMITING CONDITIONS

1. The assets have been valued as if wholly owned, no account has been taken of any outstanding monies due in respect of mortgage bonds, loans or other charges.
2. Neither the whole nor any part of this valuation or any reference thereto may be included in any published document, circular or statement or published in any way without the written approval of **CB Richard Ellis** as to the form and context in which it may appear and acknowledge that **CB Richard Ellis** were the professional valuers.
3. This valuation has been prepared for **SMASSE PROJECT, Nairobi** and for no other persons and no responsibility is accepted to third parties for the whole or any part of the contents.
4. We have not undertaken a structural survey of any of the buildings and improvements nor arranged for tests or inspections to be carried out on any of the service installations and our valuation has been prepared on the basis that the property is in a satisfactory state of repair and condition and only normal maintenance is required.
5. We have assumed that the land, buildings and improvements are fit for the purpose for which they are being used and comply with all statutory and local by-laws and regulations and the business will continue in operational existence for the foreseeable future and that there is no intention nor necessity to liquidate or curtail significantly the scale of operation.
6. We are unaware of any restrictive conditions in the title deed that would adversely affect the value of the property unless otherwise stated in this report.
7. This valuation is based on information presently available from the records in the land Registry and in the event that such records may be incomplete or not up to date responsibility cannot be accepted for any resulting deficiency or inaccuracy in the information contained herein.
8. This Valuation is invalid unless it is signed by a Director and bears the official company seal of **CB Richard Ellis Limited**.

REPORT AND VALUATION ON L.R. NUMBER 1160/224, KAREN ROAD, KAREN

L.R. Number **1160/224**
Date of inspection 25TH MARCH 2004

Situation

The property is situated on Karen Road, at its junction with Bogani Road, next to Karen College, Karen, Nairobi.

Title Details

Registered Owner: **Government of the Republic of Kenya**

Title Entries: 1. Harold Mearns Anthony Sutton and Brenda Sutton (as joint tenants) for Kshs 96,000/= dated 20TH January 1966.
 2. Transfer to Clare Horsley for Kshs 160,000/= dated 31ST October 1968
 3. Charge dated 19 Th December 1968 to South African Mutual Life Assurance Society for Kshs 78,000/=.
 4. Notice of Land Acquisition by the Collector, Kenya Gazette Notice Nos 2416 and 2417 taking possession of the above land (Karen) in accordance with section 19(i) of the Government Lands Act.

Tenure: Freehold

Annual Ground Rent: Nil

Area: 13.51 Acres

Encumbrances: None

Survey Map No.: 34047

Locality: Karen

Services

Mains water, electricity and telephone services are connected to the property.

The main water supply is from a 700 ft deep borehole within the plot. Water is stored in three concrete water tanks, one of which is underground.

A gas cylinder is also provided.

Karen Road is tar surfaced.

Permitted User

Institutional

Rating Assessment

The current assessment for the Unimproved Site Value is Kshs 296,000/= . Rates payable in year 2004 at 15% of this figure amount to Kshs 44,400/= .

The Plot

An irregularly shaped, red soil plot, with a gentle slope to the east. Boundaries are marked by barbed wire fencing on cedar posts, reinforced with overgrown hedges.

Entrance into the property is through a double hinged steel grille gate on steel posts. It opens onto a long tar surfaced driveway, turning circle and parking areas.

Security lights are provided round the compound.

IMPROVEMENTS:**General Description**

The developments comprise a miscellany of buildings spread all over the plot as follows: -

1. Administration block
2. Kitchen / Dining /Laundry block
3. Workshops
4. Store
5. Hostels
6. Staff housing
7. Gate house

There are several semi-permanent / temporary structures. We have ignored these structures for purposes of this valuation.

Construction**Administration Block**

Construction is in natural stonewalling, chisel dressed externally, plastered and painted internally, beneath a pitched gci sheet roof.

Floors are finished in coloured or plain cement screed with a few offices having PVC tiles and herringbone wood blocks. Windows are glazed standard steel or timber casements, whilst ceilings are lined in celotex panels throughout.

Internal fittings include in-built cupboards to some offices.

The accommodation comprises: -

Long Verandah; Waiting Room with further Verandah off; Reception with counter; Four (4) Offices; Lobby with safe off and rear Verandah (weldmesh protected); Store; Kitchen with terrazzo worktop; Main Office; Filing Room; Separate WC (not in use); Four (4) further Offices; open plan Office; Separate WC (not in use)

Set next and similarly constructed to the administration block is a two (2) Roomed unit, formerly a servants quarter unit.

Kitchen/Dining hall/Laundry block

Construction is in natural stone walling, part brick faced, part rendered and colourwashed externally, plastered and painted internally, beneath a pitched concrete tiled roof.

Floors are finished in PVC tiles to the canteen, burnt bricks to the dining hall, grano to the laundry and kitchen. Windows are glass louvres in timber casements, burglarproofed whilst ceilings are lined in tongued and grooved timber boarding.

Ceramic wall tiles are fitted to dado level.

The accommodation comprises: -

Canteen with a service weldmesh protected counter; Hall; steps down to Lobby; Kitchen Yard; Kitchen area with drains, chimney, terrazzo faced/timber worktops, Five (5) stainless steel sink units, Corridor with rear door, Coldroom with a mezzanine, Two (2) Shower Rooms each with an overhead shower, WC and wash hand basin; Store

Spacious Dining Hall with rear door and serving Area; Lobby with rear door; Laundry with four washing machines, shelvings and door to drying Yard; Two (2) Ablution blocks each with Three (3) WCs; Small store.

Workshop 1 (Metal Work)

Built-in block walling, part spatter dash rendered part brick faced externally, plastered and painted internally, beneath a pitched concrete tiled roof. The eaves is lined in tongued and grooved timber boarding.

Floors are finished in plain cement screed whilst windows are glass louvres in timber casements. The ceiling is unlined.

It comprises: -

Two (2) spacious Rooms, Two (2) Stores; Office; Ablution with Two (2) WCs and Three (3) wash hand basins; Corridor with rear door.

Workshop 1 (Wood Work)

Similarly constructed to workshop 1 and comprises: -

Open plan Workshop Area; Two (2) Stores; Office; Ablution with Two (2) WCs and Three (3) wash hand basins

Workshop 3

Similarly constructed to the above and comprises:

Three (3) Rooms; Three (3) WCs; Two (2) Offices; Two (2) Stores

Main store

Similarly constructed to the workshops above and comprises:

Two (2) Offices; Separate WC with wash hand basin; open plan Store

Hostel A

Similarly constructed to the workshops save for the floors which are finished in either terrazzo or PVC tiles. The rooms have in-built cupboards and shelves.

It comprises: -

Verandah; House keepers Office; Lobby / Waiting Room; Corridor with steps up to wing B; Corridor with rear door; Wing A with Twelve (12) double Rooms; Common Ablution with Four (4) wash hand basins, geyser Room, Three (3) WCs, Three (3) urinal bowls, Three (3) Shower Cubicles; Library; Office

Wing A with Twelve (12) double Rooms; Ablution with Two (2) WCs and Three (3) wash hand basins; Corridor with rear door.

Hostel B

Similarly built to Hostel A and comprises Lobby/Waiting Room; Office; Corridor; Wing A with Twelve double (12) Rooms; Ablution as above; Corridor with rear door; Conference Room; steps to Wing B having Darts Room; Store; Twelve (12) double Rooms

Staff Houses**Type 1**

This comprises three similarly constructed blocks. Construction is in block walling, rendered and colourwashed externally, plastered and painted internally, beneath a pitched asbestos sheet roof.

Floors are finished in coloured cement screed whilst ceilings are lined in celotex panels. Windows are pivoted glazed in timber casements.

Each block comprises two units, each having

Verandah; Living Room; Kitchen; Lobby; Separate WC; Shower room with shower and wash hand basin; One (1) Bedroom.

Type 2

This comprises a total of 7 similar houses, each with a garage / SQ block.

These are similarly built to type '1' above

Each house comprises: -

Living Room; Dining Room; Kitchen with worktops and Store off; Separate WC; Three (3) Bedrooms; Bathroom with a bathtub and wash hand basin

Servants quarter / Garage block

Similarly constructed to the main house save for the floor which is finished in plain cement screed and the wall which is not colourwashed.

It comprises: -

One (1) Room; Kitchen; Shower room; WC; Garage with space for 1 Car

Block of Flats

A three storey block built in reinforced framework of beams and columns infilled with natural stonewalling, chisel dressed externally, plastered and painted internally, beneath a pitched concrete tiled roof.

Floors are finished in terrazzo to the service areas and PVC tiles to the service areas.

Windows are glazed standard steel casements. Honey comb vent bricks are provided on the staircase.

There are Six (6) Flats, two on each floor, each having: -

Living cum Dining Room; Corridor; Kitchen with Balcony; Shower room with wash hand basin; Two (2) Bedrooms.

Security Guards House

Built in brick walling beneath a pitched concrete tiled roof. The floor is finished in cement screed whilst windows are timber shutters. It comprises Verandah; Five (5) Rooms; Corridor

An external temporary pit latrine is provided.

Village Technology Village (VTU)

Enclosed in own compound and with a grille gate. It comprises several semi-permanent and temporary structures and sheds. These are neglected, old and dilapidated and are not part of this valuation.

Guard House

Built in block walling, rendered and colourwashed externally, plastered and painted internally, beneath a mono pitched asbestos sheet roof. The window is timber shutter.

It comprises one (1) Room

Gas Yard

Enclosed is an 8-course high block walling. A grille gate is provided.

Pit Latrine

Set next to the gas yard and is built in block walling, beneath a mono pitched gci sheet roof. It has Two (2) doors.

Gross Areas

	<u>Sq. Ft. Approximately</u>
(a) Administration block	3452
• Verandah	930
• Servants quarter unit	286
(b) Kitchen / Dining Hall / Laundry Block	5029
• Open yard	2050
(c) Workshop 1	2160
(d) Workshop 2	2160
(e) Workshop 3	2295
(f) Main Store	2160
(g) Hostel A	3297
(h) Hostel B	3297
• Yards	646
(i) Staff Houses	
• Type 1	3121
• Type 2	7732
• Servants quarters	2048

• Garages	1866
• Block of flats	4691
• Staircase	742
• Balconies	260
• Verandah	34
• Security guards house	800
(j) Guard house	75
(k) Gas yard	884
(l) Pit Latrine	<u>65</u>
Total	47,384

Tenancies

The property is mainly occupied by government employees. Some of the staff houses were vacant as at the time of our inspection.

Repairs and Decoration

Most of the buildings are in a sorry state of repair and decoration.

Glass louvres, falling celotex panels, major roof leak points and major flaking of the paint work were noted in some of the buildings.

Complete external and internal redecoration is required for most of the buildings.

The administration block is especially in a deplorable state.

The driveway and parking area requires a facelift.

The hedging requires trimming.

General Remarks

A prime property situated in one of the preferred areas of Karen.

This is a big parcel of land extending to about 13.5 acres and has substantial potential for additional developments.

The buildings appear to be neglected and require complete internal and external redecoration and repairs. This will require substantial capital outlay to facelift them.

Our valuation is on the basis of the depreciated replacement cost of the developments and site works allowing for continued usefulness added to the open market value of the freehold land.

Our valuation is on 'as is' basis and takes account of the repair issues.

Valuation

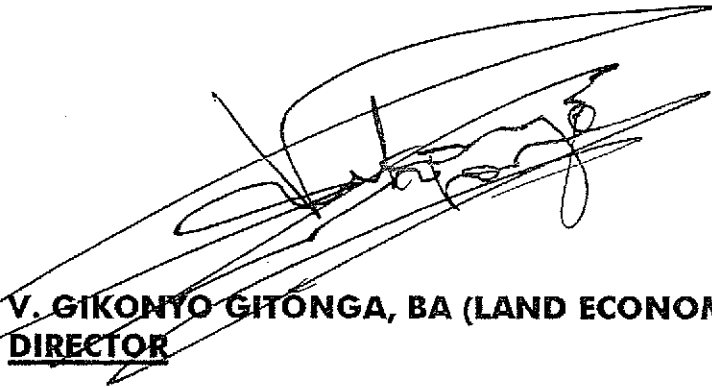
Subject to our terms of reference, limiting conditions and general remarks, we value the freehold interest in **LR Number 1160/224**, free from any encumbrances, as at today's date in the sum of **Kshs 85,000,000/=**.

(WORDS: - KENYA SHILLINGS EIGHTY FIVE MILLION)

For CB Richard Ellis Limited

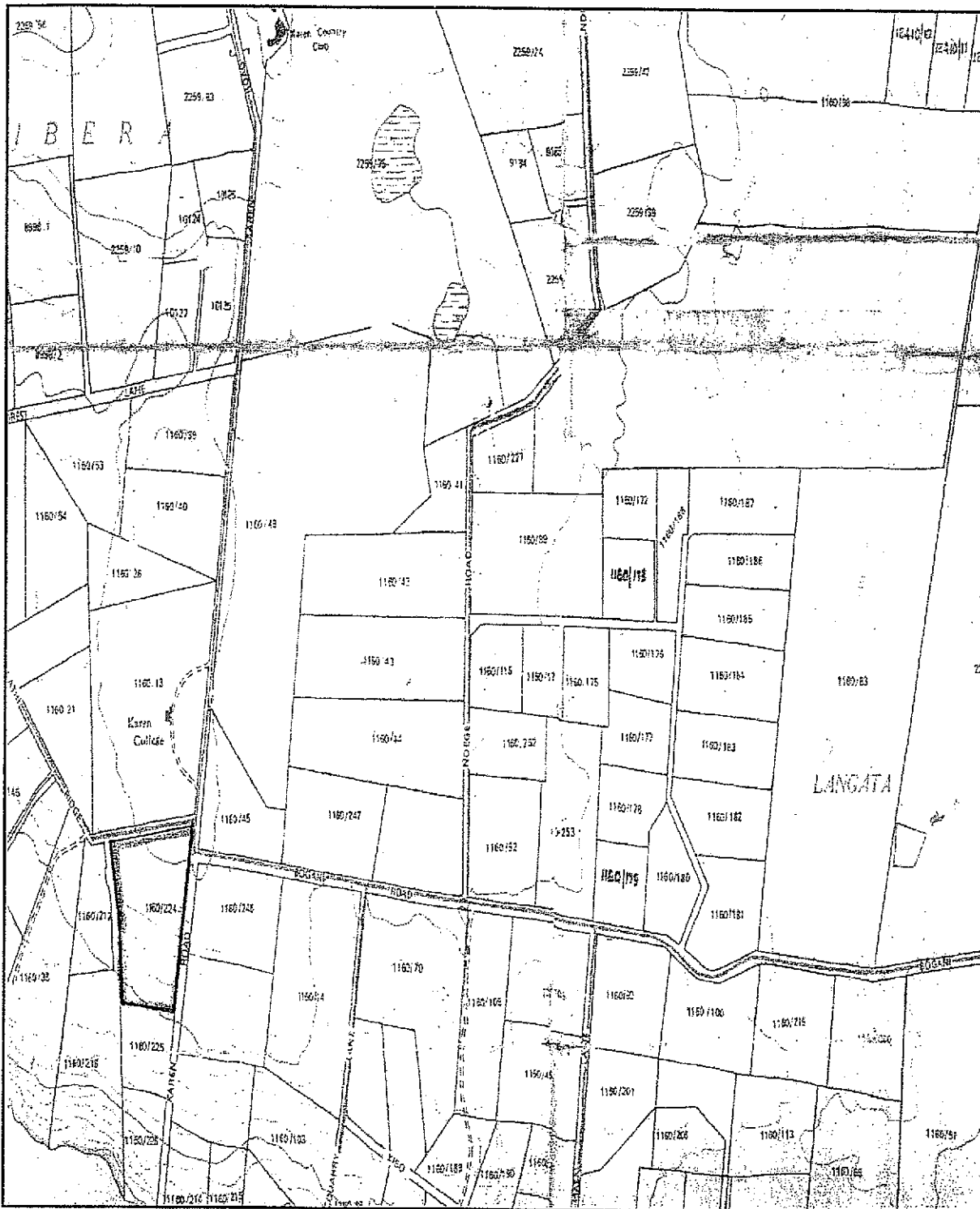


**T.P. SARUNI, BA (LAND ECONOMICS), MISK
REGISTERED VALUER**



**V. GIKONYO GITONGA, BA (LAND ECONOMICS) MSc (Econ), AMISK
DIRECTOR**

DATED: 2ND APRIL 2004



LR. No. 1160/224 – Karen Road