

フィリピン共和国 ソフトウェア開発研究所協力事業 事前調査団報告書

1994年8月

国際協力事業団

鉦開協

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フィリピン共和国
ソフトウェア開発研究所協力事業
事前調査団報告書

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序 文

フィリピン共和国政府は経済自立促進、経済基盤強化および産業発展と民生の向上の両立を目指し、国家開発計画フィリピン2000の中で、西暦2000年までに新興工業国の仲間入りを目指しており、計画実現の鍵となる産業の活性化し、国際競争力をつけることに力を注いでいる。

その一環として「フィ」国政府は、ソフトウェア産業の振興に資するために、国立コンピュータセンターの傘下に「ソフトウェア開発研究所」を設立することを計画し、93年5月に我が国に対してプロジェクト方式技術協力を要請してきた。

この要請を受けて我が国政府は、国際協力事業団（JICA）を通じて94年4月10日から4月21日まで、事前調査団を派遣し、フィ国側関係機関との協議を通じて要請の背景、計画の妥当性、協力の規模等を調査し、確認・合意できた事項について討議議事録（Minutes of Discussions）に取纏め署名交換を行った。

本報告書は同調査団の調査結果をとりまとめたものである。

ここに本調査団の派遣に関し、ご協力いただいた日本・フィリピン両国の関係各位に対し深甚の謝意を表するとともに、あわせて今後のご支援をお願いする次第である。

94年8月

国際協力事業団
理事 田 守 栄 一

写 真



PCMワークショップ



ミニッツ署名交換

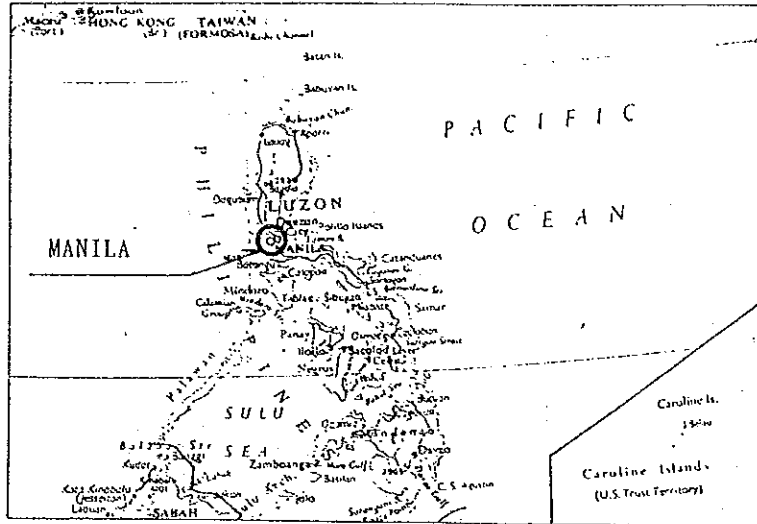


プロジェクトサイト

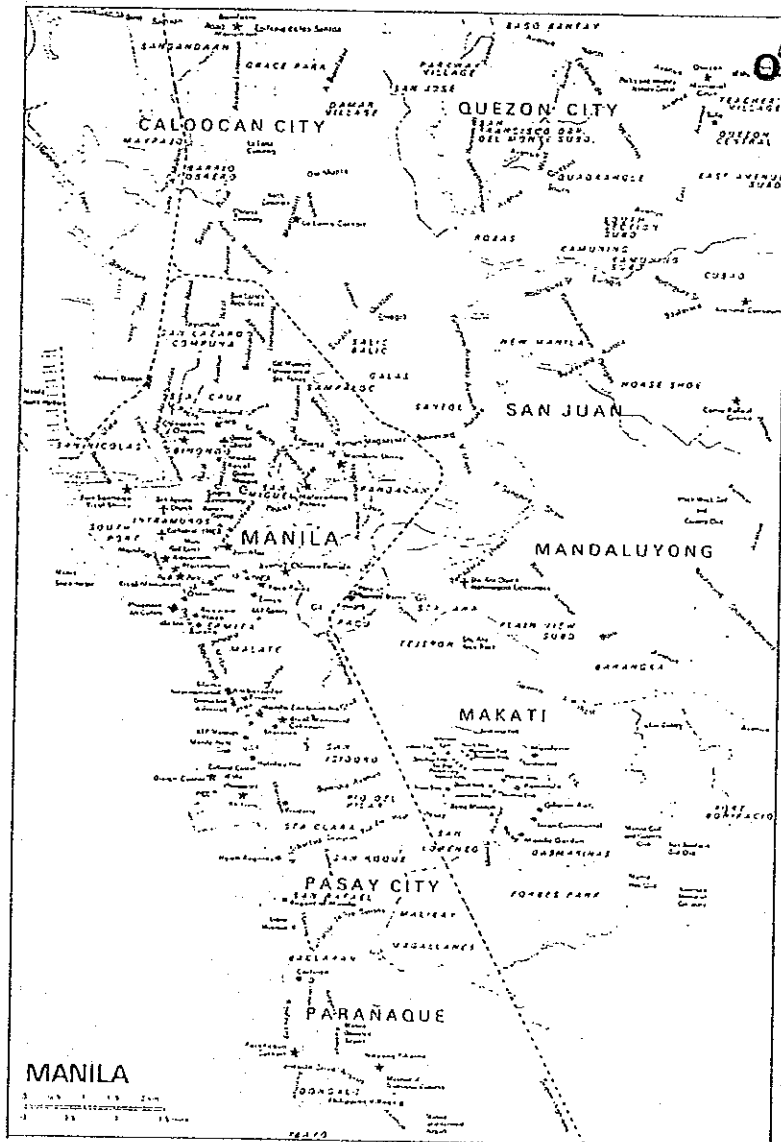


プロジェクトサイト

プロジェクト位置図



フィリピン共和国全土図



プロジェクト・サイト

マニラ市周辺地図

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1. 調査結果の要約

日本国政府は、フィリピン国政府からのフィリピン・ソフトウェア開発研究所協力事業に係るプロジェクト方式技術協力の要請を受けて、計画の背景、協力の妥当性等を調査するためにJICAを通じて事前調査団を平成6年4月10日～21日まで現地に派遣した。

調査結果を要約すると大旨以下の通りである。

(1) 要請の背景

フィリピンにおいては、ラモス政権の発足にあたり、新たな開発計画（フィリピン2000）が策定された。この計画は、2000年までにフィリピンを新工業国家とすることを目指しており、計画実現のキーとなる戦略として情報化が位置付けられている。これに対応して、フィリピンの情報化計画である国家情報化計画（NITP ; National Information Technology Plan）も新たにNITP 2000として改定された。

NITP 2000のゴールは、フィリピン国内の全てのセクターにおいて情報化を図ることにある。このために、以下の戦略が掲げられている。

1) 情報技術の利用の促進

2) 情報産業の育成

特に、行政事務の情報化及び国内産業のコンピュータ化を進めるとともに、同国ソフトウェア産業の輸出拡大を図るため、IT専門家のレベルアップのための教育・トレーニングが国家的な要請となっており、1992年7月のJICA工業分野振興開発調査の報告書においても情報処理技術者の養成が課題とされている。これらを踏まえ、具体的プロジェクトとして今回の協力要請がなされたものである。

(2) 要請の内容

今回の要請は、上記の背景を踏まえ、フィリピンのソフトウェア技術者の技術レベルを強化、高度化しフィリピン・ソフトウェア産業を真の国際競争力のレベルにまで質の向上を図ることを最終目的とし、以下の事業を行うフィリピン・ソフトウェア開発研究所を設置することにある。

1) ソフトウェア産業及びユーザー企業のIT技術者、民間情報処理研修センターの講師のために継続的かつ先進的な教育・研修を提供する。

2) 先進技術移転と現地のIT技術者に対する新技術普及を実施する。

3) 技術者の育成に加え、ソフトウェアの開発に活用できる最新技術の、コンピュータネットワークの整備を行う。

(3) 協力の妥当性・今後の進め方

フィリピン側と協議を行った結果、本プロジェクトは国家レベルの開発計画の一環として位置付けられており、プロジェクトの趣旨及び内容についても、日本の技術協力スキームに合致したものと考えられる。

今後、できるだけ早い、プロジェクトの発足に向けて、国内協力体制の確立、長期調査実施によるプロジェクトの詳細化を図っていくことが必要である。

2. 事前調査団派遣

2-1 調査団派遣の経緯と目的

フィリピン国では、90年国家情報化計画により行政事務の情報化及び国内産業のコンピュータ化を進めるとともに、同国ソフトウェア産業の輸出拡大を図るため、IT (information Technology) 専門家のレベルアップのための教育・トレーニングが国家的課題となっている。また、92年7月のJICA工業分野振興開発調査の報告書においても情報処理技術者の育成が指摘された。そのため、フィ国政府は、大統領府に属する国内コンピュータセンター (NCC) が実施機関となり、ソフトウェア開発研究所を設立し、コンピュータ技術者を対象に、研修コースを開設することにより、広く情報処理技術者を育成することを計画し、93年5月に我が国に対し、プロジェクト方式技術協力を要請越してきた。

この要請を受けて我が国政府は、フィ国側関係機関との協議を通じて要請の背景、計画の妥当性、協力の基本計画等を調査することを目的として、国際協力事業団 (JICA) を通じて事前調査団を派遣した。

2-2 調査団の構成

担当分野	氏名	現職
団長 総括	能登 靖	通商産業省機械情報産業局 情報処理振興課 課長補佐
団員 技術協力計画	渡辺和行	通商産業省大臣官房情報管理課 情報業務室 業務係長
団員 機材計画	河野方美	財団法人 国際情報化協力センター 振興部 部長
団員 コンピュータ教育	深瀬隆法	財団法人 国際情報化協力センター 研修部 部長代理
団員 施設計画	田坂 厚	国際協力事業団 特別嘱託
団員 PCMワークショップ モデレータ	宮川真木	財団法人 国際開発高等教育機構 事業部 主任
団員 プロジェクト運営管理	大竹 茂	国際協力事業団 鋳工業開発協力部 鋳工業開発協力課 職員

2-3 調査日程

派遣期間 94年4月10日～4月21日(12日間)

日順	月 日	行 程	調 査 内 容
1	4/10	成田→マニラ	移動
2	4/11		大久保所員と打合せ A.M. 日本大使館表敬、JICA事務所打ち合わせ P.M. BOI表敬、NCC表敬、サイト視察
3	4/12		A.M. NCCとの協議 P.M. JPCM説明 NEDA表敬
4	4/13		A.M. 視察 (アンダーセンコンサルティング、I/ACT) P.M. (SOFTWARE VENTURES INTN'L CORPORATION, SOCIAL SECURITY SYSTEM, ATENEO DE MANILA UNIVERSITY)
5	4/14		JPCMワークショップ (問題分析)
6	4/15		" (目的分析、プロジェクトの選択)
7	4/16		資料整理
8	4/17		休日、団内打合せ
9	4/18		A.M. JPCMワークショップ (PDM作成) P.M. 協議
10	4/19		協議、M/D、TSI案作成
11	4/20		A.M. M/D、TSI署名 P.M. JICA事務所・大使館報告
12	4/21	マニラ→成田	移動

2-4 主要面談者リスト

(1) フィリピン側

① 国立コンピューターセンター (NCC)

Mr. Fermin Javier, Managing Director.

Ms. Cynthia Topacio, Director, Directorate for IT Manpower Development

Ms. Juli Ana Sudario, Information Technology Officer

② 貿易工業省 (DTI)

投資委員会 (BOI)

Mr. Tomas Alcantara, Undersecretary

Mr. Allan Tolentino, Program Officer for Foreign Assisted Project

Mr. Paul Tang, Supervising Investment Specialist

Mr. Gina Cumpas, Senior Investment Specialist

Mr. Susan Corpuz, Senior Investment Specialist

③ 貿易工業省 (DTI)

輸出貿易振興局 (BETP)

Ms. Grace Llaneta, Product Officer

Ms. Pearl Mina, Product Officer

④ 国家経済開発庁 (NEDA)

Ms. Josefina Esguerra, Director, PIS

Mr. Dennis V. del Rosario, Management Information System Staff

Ms. Brenda R. Mendoza, Trade, Industry&Utilities Staff

Mr. Ramon M. Flacon, Social Development Staff

⑤ フィリピンソフトウェア協会 (PSA)

Mr. Guirl Guanio, President

⑥ フィリピンコンピュータ協会 (PCS)

Ms. Dittas A. Formoso, Consultant

⑦ アンダーセンコンサルティング

Mr. Baltazar N. Endriga, President

⑧ I/ACT

Mr. Mike Ilagan

⑨ Software Ventures International

Mr. Gil Guanio, President

⑩ Social Security System

⑪ アテネオ大学

Mr. Arnie del Rosario, Director, Computer Science Program

(2) 日本側

① 在フィリピン日本国大使館

中 沢 則 夫

一等書記官

② JICA事務所

橋 本 明 彦

所 長

町 田 哲

次 長

大久保 恭 子

所 員

③ JICA専門家

大 竹 伸 幸

(貿易工業省投資委員会)

3. 要請の背景

3-1 フィリピン共和国における協力要請対象分野の現状

フィリピンにおけるソフトウェア技術者の教育機関としては、大学、国立コンピュータセンター（NCC）、私立のコンピュータ学校、企業内トレーニング等があり、これらの教育機関において技術者の育成が行われている。

しかし、指導にあたる高レベル技術者の不足、研修機材の老朽化等の問題があり、大学及びNCCといった教育機関でも、初級SEレベル技術者向けの基礎的な教育が主であり、私立のコンピュータ学校に至っては、設備の整った少数の学校を除き、スプレッド・シート、データベース等のコンピュータを利用するための教育が主であるなど、フィリピン全体としては、基礎的なソフトウェア技術者の育成にとどまっている。

そのため、国家情報化計画（NITP）のような国家的な目標を達成できる高レベルの技術者の育成が難しく、高レベルのソフトウェア技術者が非常に不足しているのが現状である。

3-2 国家開発計画における協力要請対象分野の位置付け

ラモス政権は、国家開発計画（フィリピン2000）を掲げ、西暦2000年までに新興工業国の仲間入りを目指している。そしてこの計画を達成するため、経済発展の鍵となる産業を活性化し、国際競争力をつけていくことが国家レベルでの努力目標となっている。

このような状況の中で、フィリピンのソフトウェア産業は、情報化の推進による他産業の競争力強化と自ら外貨を稼ぐ輸出産業として経済発展に貢献する重要な産業として位置付けられ、これらを国家レベルで計画的に推進するため、国家情報化計画（NITP）を策定し、行政事務の情報化、国内産業の情報化、ソフトウェア産業の輸出拡大等が図られている。

3-3 我が国への要請に至った経緯

フィリピン国内においても、国家情報化計画（NITP）のような国家的な目標を達成するためには、高レベルの技術者が不足しており、ソフトウェア技術者のレベルアップのための教育・トレーニングが必要と認識されており、92年のJICA工業分野新興開発調査においても情報処理技術者の育成が課題とされた。

そのため、フィリピン国政府は、大統領府に属する国立コンピュータセンター（NCC）が実施機関として、ソフトウェア開発研究所を設立し、ソフトウェア技術者を対象に研修コースを開設することにより、広く情報処理技術者を育成することを計画し、93年5月に我が国に対しプロジェクト方式の技術協力を要請した。

4. 要請の内容と協力の妥当性

4-1 プロジェクトの名称と目的

名称：フィリピン・ソフトウェア開発研究所

英文名：Philippine Software Development Institute

目的：ソフトウェア開発研究所(SDI)でハイレベルのIT教育／訓練プログラムが供給される。

4-2 プロジェクトの実施機関と実施体制

実施機関：国立コンピュータセンター（NCC；National Computer Center）

実施体制：大統領府の傘下にある国立コンピュータセンター（NCC）が実施機関となり、NCCの中にSDIを位置付ける。（組織図は、議事録別添のとおり）

実施場所は、フィリピン大学デリマンキャンパスの中に現在建設中の新NCCビル内となる。フィリピン側からの説明では、プロジェクトで実施予定の2階部分は94年12月までに使用可能となるということであった。

4-3 技術移転分野

フィ側から以下の研修コースの開発・実施に必要な技術の移転が要請された。

1) 上級プログラム設計コース	1年目
2) オブジェクト指向によるシステム分析と設計コース	1年目
3) システム・インテグレーションコース	2年目
4) ITカリキュラム設計と開発コース	1年目
5) メディア教材（CAI，マルチメディア）作成技術コース	2年目
6) 戦略情報システム（SIS）の計画コース	1年目
7) プロジェクト・マネジメントコース	2年目
8) 構造化システム分析と設計コース	1年目

なお、フィリピン側からの優先順位に従って研修コースは並べてある。又、右側の年度はコース開発年である。

4-4 協力規模と協力期間

フィリピン側から要請の協力規模（技術移転分野）は、長期専門家5名（チーフアドバイザー及び業務調整員を含む）と短期専門家若干名で対応できる規模である。

また、協力期間に関しては、R/D発効後5年間の協力ということで確認した。

4-5 協力の妥当性

フィリピン側から要請された研修コースを、技術面での重要性、プロジェクト目標に対する方向性のみならず、フィリピン側での自主開発の可能性も考慮して、個々の研修コースの協力の妥当性を検討した。

1) 上級プログラム設計コース

フィリピン側の材料を中心に技術協力の分を追加して実現可能である。

2) オブジェクト指向によるシステム分析と設計コース

まだ事例の少ない最新の方法論であるため、長期専門家とじっくり相談して推進させる必要がある。従って、時間はかかるものと考えられる。

3) システム・インテグレーションコース

技術協力の一貫で、教材提供を行うことにより、内容の確定に持っていけると考えられる。

4) ITカリキュラム設計と開発コース

長期専門家の指導のもと、カリキュラム内容を作っていく事で実現できると考えられる。

5) メディア教材(CAI, マルチメディア)作成技術コース

ベースとなる技術、システム、アーキテクチャーを何とするかがキーとなる。長期専門家とじっくり相談をして推進させる必要がある。

6) 戦略情報システム(SIS)の計画コース

SISという発想自体が過去のものとなりつつあるので、これに代わりエンドユーザコンピューティングをテーマにした内容の検討が必要と思われる。

7) プロジェクト・マネジメントコース

技術協力分野に入る、プロジェクト管理教育ツールを有効に活用して、長期専門家の指導で実現可能と考えられる。

8) 構造化システム分析と設計コース

1) と同じくフィ側の材料を中心に技術協力の分を追加して実現が可能である。

したがって、暫定実施計画(TSI)に記載するコースは、最初の2~3年で開発・実施するコースの3~4コースのみとし、暫定実施計画に記載しないコースについては、今後検討を進めるものとする。その理由として、ここに掲げた技術以外にも今後新しい技術がでてくることが予想されるため、全てを固定する必要はないものと考えられる。

また、長期専門家が全てをカバーすることは不可能であり、短期専門家の有効活用が必要である。

5. プロジェクト協力の基本計画

フィリピン国側からの協力要請内容、協力の妥当性および日本側の協力体制等を勘案すると以下の様な基本計画が想定される。

5-1 協力期間

R/D発効後5年間とする。

5-2 投入計画

(協力分野)

フィリピン側要請の技術移転分野に対して基本的には5年間かけて協力する。ただし、今後新しい技術がでてくることが予想されるため、全てのコースを協力範囲に含めることはせず

当初は3～4コースのみ協力範囲に含めることとし、残りについては今後検討を進めるものとする。

協力範囲とするコースは、長期調査で協議し決定する。

(専門家派遣)

・長期専門家

- 1) チーフアドバイザー
- 2) 業務調整員
- 3) カリキュラム設計開発専門家
- 4) オープンシステム（データベース設計管理）専門家
- 5) データコミュニケーション専門家

・短期専門家

- 1) 機材据付操作（若干名）
- 2) システムの運用・維持管理の現地での指導、最新技術の移転等必要に応じて若干名

(機材供与)

フィリピン側の機材要請リスト (M/D Annex 5) には、教材開発・研修実施に必要な機材のみが記載されているが、台数については、フィリピン側と協議して調整が必要である。

長期調査で、下記の項目について調査し、台数を決定する。

- 1) 教室、演習室の数が適当か（並行して4コース同時に実施するのか）
- 2) 教室のPCの台数が適当か（1教室5台のPCの利用方法の確認）
- 3) 講師室の機材の台数が適当か（20台のPC、20台のノート型PC、6台のプリンタ、5台のコピー機、3台のFAX）

(研修員受入れ)

研修コースに取り上げられるカリキュラム開発・実施技術の移転、又、上級レベルのシステム管理技術の移転などを目的に若干名の受入れが必要と考えられるが、具体的には長期専門家との調整により決定される。

(その他)

研修コース実施においてセンターで利用可能な教材、プロジェクト管理教育ツールの提供が速やかなプロジェクト運営に役立つものと考えられる。ただし、教材利用に当たっての利用可能範囲については、著作権の保護の目的で確認書の取り交わしが必要であろう。

また、4-3項の技術移転分野に加え、将来の自主運営を目的としたセンターのマネジメントに関する指導についても長期専門家による指導が必要となる。

6. PCMワークショップの実施

本プロジェクトのPDM（プロジェクト・デザイン・マトリックス）の作成を目的として、PCMワークショップが、4月14日、15日、18日の3日間の日程で実施された。日・フィの共同作業により、PDMのプロジェクトの要約及び外部条件が設定され、当初の目的は達成できたと言える。各分析作業による系図及びPDM等は、ミニッツに参考資料として添付された。

短いワークショップの期間においてPDMの作成まで到達できた要因として、フィリピン側の本手法に対する理解力の高さ及び積極的な参加姿勢があげられる。彼らからは、「ワークショップを通し、我々内部でも明確に理解していなかった問題の存在が確認され、それらの位置付け及び解決方法の検討ができた」、「Policy makingには有効な方法である」、「Talkativeなフィリピン人の話し合いを整理するのに効果的な方法である」等の、肯定的な評価を得ることができた。

また、JICAフィリピン事務所の担当者からは、「ワークショップは、協力プロジェクトについてフィリピン側関係者とじっくり議論できる貴重な機会であった」とのコメントを得た。

その他、本ワークショップの主な成果として以下の点があげられる。

- 1) プロジェクトの選択の作業において、目的系図上で「フィリピン側のSDI構想の全体像」、「日本への援助要請範囲」、「日本の援助の可能性のある範囲」が明示され、日・フィ双方にとってそれらの合致及び相違部分が明確となった。
- 2) フィリピン側から、実施機関（NCC）以外の関係諸機関（貿易工業省、NEDA、フィリピンコンピュータ協会等）の参加があったため、より広い視野からの分析・立案作業が行われた。また、これらの関係機関の間で、援助要請の背景、プロジェクトの構想等への理解が深まった。また、今後の課題として以下について、更に検討を加える必要がある。

- 1) JPCMをセオリー通り適用するには、両者の語学力は言うまでもなく、各分析作業に相当の時間を要する。

今回も、JPCMに係る協議に、大半の時間を費し、本来の事前調査の確認事項である先方実施体制等の確認が十分に出来なかった。

- 2) 今回は、JPCMのセオリーに従い、ゼロから各分析・系統図の作成を試みたが、フィ側から『要請書を提出しているにもかかわらず、何故要請書内容を無視してワークショップを行うのか。』との指摘があり、導入の時期についての疑問があった。

なお、ワークショップの日程に関して、調査団活動の他の作業日程との関係上、当初2.5日の予定を立てたが、当日参加者の同意を得て予定を変更し第3日目の午後の一部もワークショップに充てたため、結果的に3日間の日程となった。

7. 調査団所見

(1) フィリピン側関係官庁の対応

PCMのワークショップにも、DTIからは当初想定した人数以上の参加者があった。またNEDAについては、当初ワークショップの参加を要請していなかったが、逆にNEDA側から参加希望があり、3日間のワークショップに2～3人が参加した。このように、フィリピン側関係官庁のプロジェクトへの関心は非常に高かった。

(2) PCM実施

調査期間中、丸3日間のPCMワークショップが設定されたこともあり、従来の事前調査に比べて密度の濃い日程であったが、ワークショップ期間中及びその後のミニッツ作成作業において、フィリピン側関係者の一貫として熱意ある姿勢で臨んでいた。彼らのプロジェクトにかける意欲は、PCMの系図やPDMにも反映されている。

今後のプロジェクトを成功させる大きな要因となると思われる。

PCMの実施は、NCCのプロジェクト担当者だけでなく、NEDA等の多くの関係者がワークショップに参加したことにより、プロジェクトについての関係者の理解が深まったと思われる。

(3) 民間研修機関

フィリピンでは、ソフトウェア産業育成のために、民間のコンピュータ学校や大学（コンピュータサイエンス学科）などでソフトウェア教育が行われている。これらの機関を訪問し、教育カリキュラム、コンピュータ設備の調査を行った。

また、ソフトウェア業界を訪問し、プログラマ・SEの人材育成、スキルアップをどのような方法で行っているか調査した。

具体的には、OJTの進め方・体制、企業内研修の進め方、外部教育機関の利用などを調査し、意見交換した。

この中で、プログラマ・初級SEの育成に関しては、既存の教育機関の活用で充分であるのに対して、プログラマ・初級SEを上級SEへ育成するためには教育機関の充実（カリキュラム、コンピュータ設備等の充実）が重要な課題であることを認識した。

8. その他

8-1 専門家の生活環境

調査団が派遣される前の専門家の生活環境に関する情報では、停電が多く、自家発電装置が必要であるとのことであった。

しかし、フィリピン政府は今年度インフラストラクチャーの整備を重要視して、電力事情の改善に努めているため、調査団派遣中も一度の停電も無く、新聞情報（1994年4月14日・フィリピン版KYODO NEWS DAILY）でも「フィリピンが電力事情の好転などにより今年度4%の経済成長回復」とあった。

従って安全対策以外には日常生活上の不便さを感じないが、JICA関係者でも盗難等の事故が発生していた。

8-2 今後の進め方及び留意事項

今回の事前調査ではプロジェクトの概要をフィピン側と合意することができた。しかし、プロジェクトの実施に向けて今回十分協議出来なかった下記項目について長期調査員を派遣して調査する必要がある。

- 1) NCCの研修コースの内容の確認
- 2) 日本側が協力する研修コースの実施スケジュールの確認
- 3) 要請機材の必要性
- 4) 技術協力の範囲とスケジュールの確認

また、今回のワークショップで作成されたPDMは、指標及び指標入手手段が記入されていないので、今後フィリピン側と協議の上、今後R/D締結までに完成させることも必要である。

さらに、PDMは、プロジェクトの内部及び周辺的环境変化に応じ、プロジェクトサイクルの適当な時期において変更・修正の検討が必要とされるため、指標及び指標入手手段の記入だけでなく、引続きプロジェクトの要約、外部条件の論理関係等の検討が、フィリピン側と共に行われるべきである。

附 属 资 料

MINUTES OF DISCUSSIONS
BETWEEN THE JAPANESE PRELIMINARY SURVEY TEAM
AND THE AUTHORITIES CONCERNED IN THE GOVERNMENT
OF THE REPUBLIC OF THE PHILIPPINES
ON THE JAPANESE TECHNICAL COOPERATION FOR THE PROJECT
ON THE PHILIPPINE SOFTWARE DEVELOPMENT INSTITUTE

The Japanese Preliminary Survey Team (hereinafter referred to as "the Team") organized by the Japan International Cooperation Agency (hereinafter referred to as "JICA") and headed by Mr. Yasushi Noto visited the Republic of the Philippines from April 10 to April 21, 1994, for the purpose of clarifying the outline and background of the Philippine proposal as well as studying the feasibility on the Japanese Technical Cooperation Project on the Philippine Software Development Institute (hereinafter referred to as "the Project").

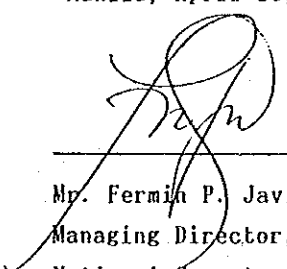
During its stay in Philippines, the Team exchanged views and had a series of discussions with the officials of National Computer Center and other organizations concerned, and also made a field survey to the relevant sites and facilities.

As a result of the discussions, both sides came to the understanding concerning the matters referred to in the document attached herewith.

Manila, April 20, 1994

能登靖

Mr. Yasushi Noto
Leader,
Preliminary Survey Team,
Japan International Cooperation
Agency, Japan



Mr. Fermín P. Javier
Managing Director,
National Computer Center,
The Republic of the Philippines

ATTACHED DOCUMENT

I. The Team and the Philippine side held a 3-day consecutive Project Cycle Management (PCM) Workshop .

1. Finding from Participation Analysis

Participation Analysis was made to identify the interactions among the people and institutions concerned in the Project as shown in Annex 1.

2. Finding from Problem Analysis

Problem Analysis by setting "Development of the Software Industry is slow" as the core problem.

Immediate causes affecting "Development of the Software Industry is slow" were identified as follows;

- (1) IT domestic market is small
- (2) Low priority is given to IT expenditure in users
- (3) Government IT policy support is weak
- (4) Available HW and SW facilities are low in level & insufficient
- (5) Use of IT productivity tools and methods are insufficient
- (6) IT R&D activities are practically non-existent/minimal
- (7) IT manpower quality & quantity are insufficient

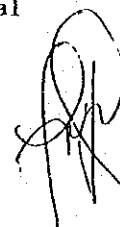
Outcomes of Problem Analysis are shown as Annex 2.

3. Finding from Objective Analysis and Alternative Analysis

Objective Analysis were conducted as shown in Annex 3 , then Substance of technical cooperation and possibility of implementation were studied .

As a result of studies , Proposed project was confirmed and scope and subject of technical cooperation implemented by the Government of Japan .

- (1) Areas of SDI Functions/Activities: within the dotted line of Annex 3
- (2) Areas of Request from the Philippine side:
within the double line boxes of Annex 3
- (3) Areas of Technical Cooperation of the Japanese side :
within the double line boxes of Annex 3
- (4) Areas of Request from the Philippine side and Areas of Technical Cooperation of the Japanese side coincide.



4. After mutual agreement, the draft of Project Design Matrix (PDM) was framed as shown in Annex 4.

With respect to PDM, the Team and the Philippine side agreed following matters.

- (1) PDM is the reference means for the effective operation of the Project.
- (2) PDM is subject to change in accordance with results of the future survey.

II. Proposed Technical Cooperation Program

1. Name of the Project:

The Philippine Software Development Institute (SDI)

2. Implementation Agency and Administration of the Project:

- (1) Implementation Agency of the Project:

National Computer Center

- (2) Administration:

Managing Director of National Computer Center will bear overall responsibility for the implementation of the Project.

SDI Chief Executive Officer/the Project Manager will be in charge of the administrative management and technical matter in the Project.

3. Duration of the Project:

The duration of the technical cooperation by the Government of Japan through JICA would be five (5) years from the date agreed by both sides.

4. Site and Facilities for the Project:

As to the site and facilities for the Project, the Philippine side explained as follows:

- (1) Site for the Project

New facilities of the National Computer Center within University of the Philippines Diliman campus, Quezon city.

- (2) Building and facilities for the Project

The New facilities of National Computer Center is presently under construction and is expected to be operational by first quarter of the year 1995.



5. Objective and Activities of the Project:

The team and the Philippine side tentatively agreed that Objective and Activities of the Project is based on the draft PDM.

6. Scope of the Project:

The following technical cooperation plan was discussed.

- (1) Technology transfer in the following courses was requested by the Philippine side for consideration by the Japanese side (arranged in the order of priority).

	Start
- Advanced Programming Design (Open System , 4GL , CASE tool , OOP (C++ , Small talk) etc.)	Year 1
- Object Oriented System Analysis and Design	Year 1
- System Integration	Year 2
- IT Curriculum Design and Development	Year 1
- Technology Based Learning Aid (Computer Aided Instruction, Multi-Media etc.)	Year 2
- Strategic Information System Planning	Year 1
- Project Management	Year 2
- Structured Systems Analysis and Design	Year 1
- Updated Courses (Data Communication , Database Design/Management etc.)	

(2) Dispatch plan of Japanese experts

Long-term expert will be required to fill the following roles:

- Chief Advisor
- Coordinator
- Expert in IT curriculum design and development
- Expert in Open System with database design and management
- Expert in Data Communication

Short-term experts will be dispatched if necessity arises .



(3) Training plan of Philippine counterpart personnel in Japan

The Philippine side requested the counterpart training in Japan in the following areas:

- Curriculum development for advance IT courses
- Software engineering
- Database management
- Communications/networking
- Computer-Aided Instruction (use of multi-media, etc.)
- Other (Training Program Management, IS Project Management, IS Management, Strategic Planning etc.)

A study will be carried out to make the detailed training plan.

(4) Provision of machinery, equipment and material by Japan

The Philippine side described the items of the proposed machinery and equipment as shown in Annex 5. A study will be carried out later to provide the detailed specification of the machinery, equipment and materials.

(5) Schedule of the Project:

The tentative implementation plan for the Project is shown in Annex 6.

7. Management of the Project (Organization Chart is shown in Annex 7.)

The Team and the Philippine side agreed that a Joint Coordinating Committee should be established for effective and successful implementation of the Project.

(1) The Joint Coordinating Committee will be held at least once a year and /or whenever necessity arises. Its functions are as follows:

- 1) To review the annual work plan of the Project.
- 2) To review the overall progress of the technical cooperation program as well as the achievements of the above mentioned annual work plan.
- 3) To exchange views on major issues arising from or in connection with the technical cooperation program.

(2) Composition

- 1) Chairman
Managing Director of NCC



2) Members

Philippine side

- (a) SDI Chief Executive Officer
- (b) DTI Representative
- (c) Private Sector Representative (President Philippine Software Association)

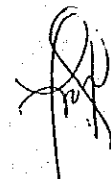
Japanese side

- (a) Chief Advisor
- (b) Coordinator
- (c) The Japanese Experts designated by the chief advisor
- (d) Representative of the JICA office
- (e) Other personnel concerned to be dispatched by JICA, if necessary

Note : Official(s) of Embassy of Japan may attend the joint coordinating committee as observer(s).

8. Measures to be taken by the Government of the Republic of the Philippines

- (1) Assignment of counterpart personnel and allocation of operation budget
 - 1) The Team stressed that the assignment of enough number of the qualified counterpart personnel and the allocation of the sufficient amount of the operational budget are prerequisite for the successful implementation of the Project.
 - 2) The Philippine side promised that they would secure qualified counterpart personnel and provide the necessary amount of operational budget for the Project as shown in Annex 8 and 9 respectively.
- (2) Equipment and materials necessary for the implementation of the Project other than those provided through JICA will be provided .
The Philippine side expressed that such machinery, equipment and materials as shown in Annex 10 would be provided by the Philippine side for the Project.



9. Other Matters

- (1) The Philippine side well understood the purpose and system of the project-type technical cooperation program by the Government of Japan through JICA as explained by the Team.
- (2) The Team and the Philippine side agreed that English would be preferably used as a common language in the course of implementation of the Project.
- (3) Attendance of the meeting is shown in Annex 11.

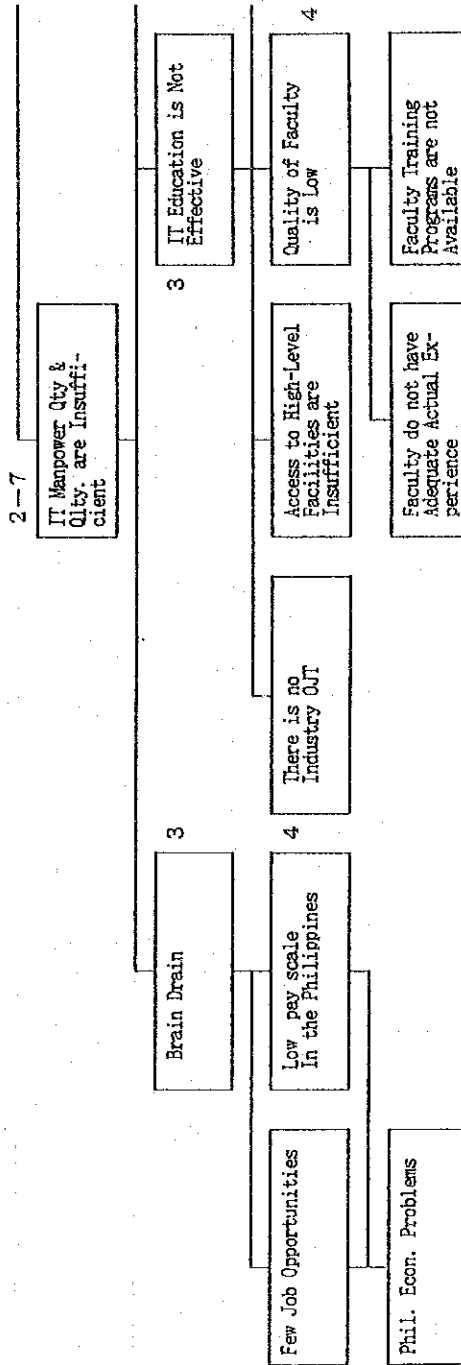


Annex 1 Participation Analysis (Categorization)

Beneficiaries	Negatively Affected	Implementing Agency	Funding Organizations	Other Related Groups
P S A	Foreign Based Training Centers	NCC	JICA	ITAP
P C S		NCI	NCC	
Software Houses		SDI	Other Sponsors	
Universities	Supporting Agencies	Other Funding Organizations which may support the project	CCPAP (Other ODAs)	
VOC-TECH	NEDA	ADB		
IT Professionals	ITOC	WB		
Computer User Organizations	Office of the President	UNDP		
User Organization (Industry)	Proponent Organization			
	DTI (Board of Trustees)			

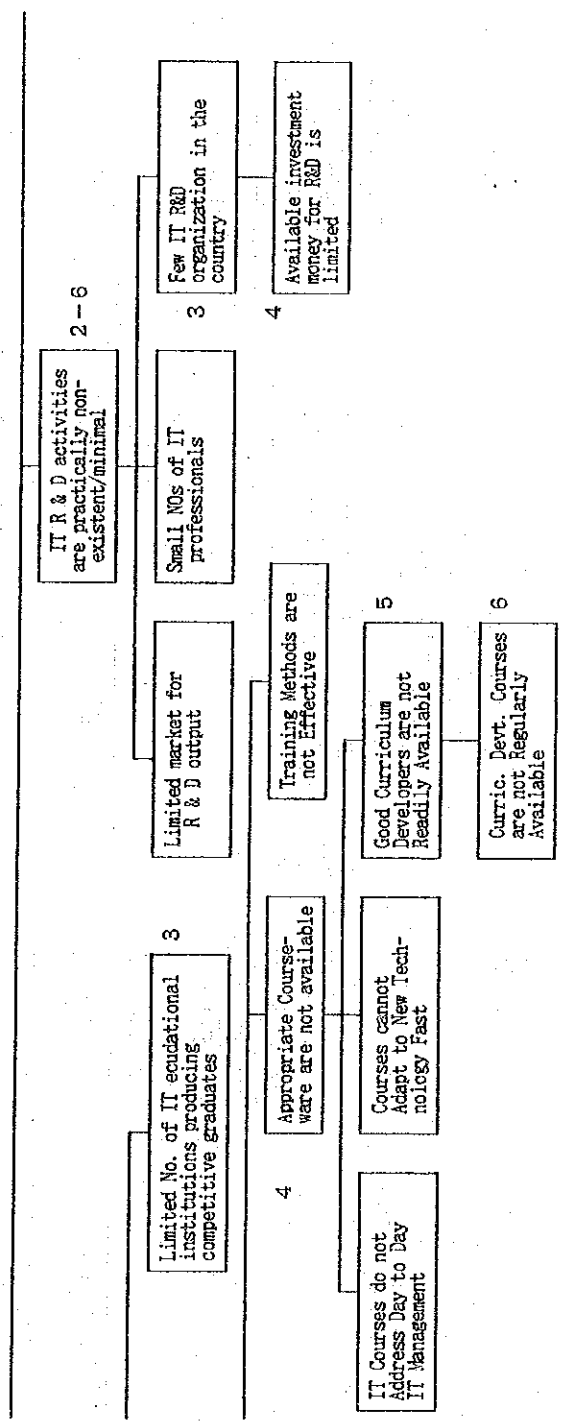
Annex 2 Problem Analysis

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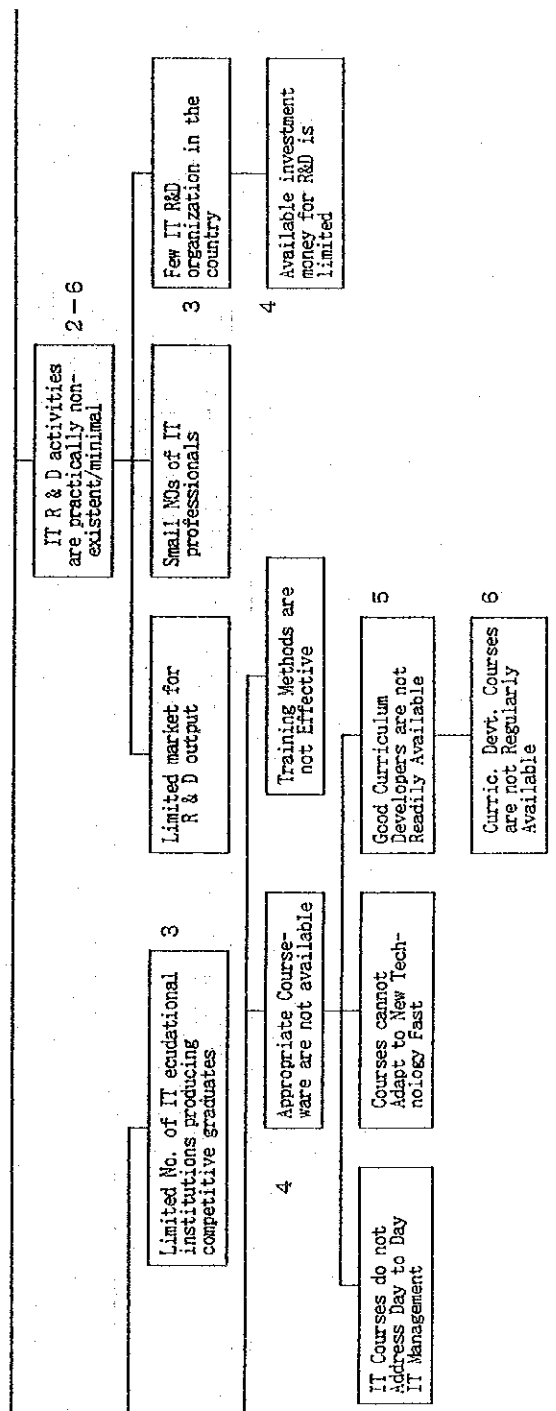
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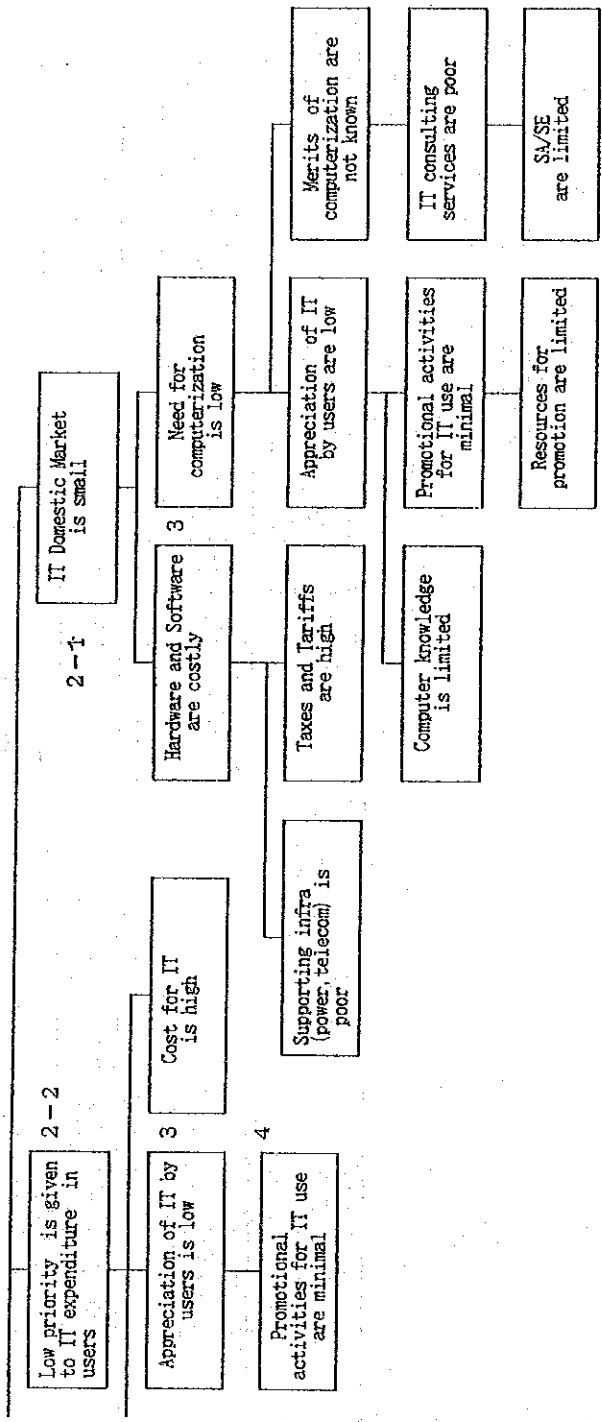
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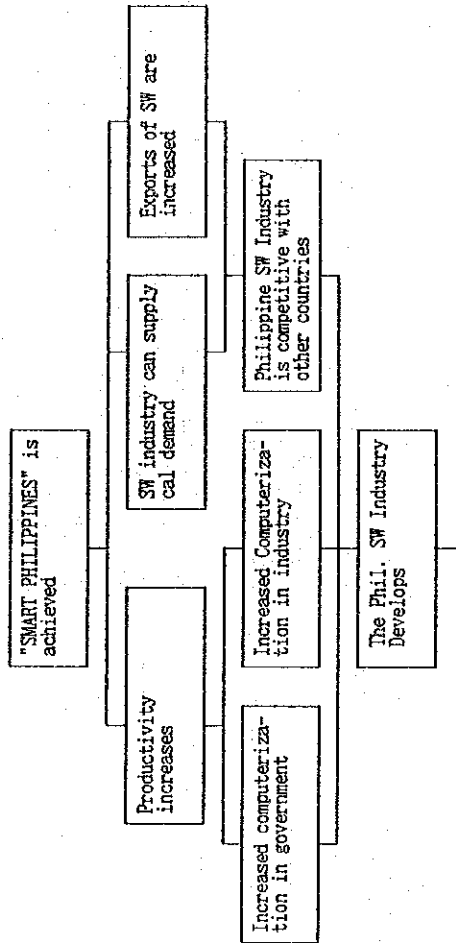
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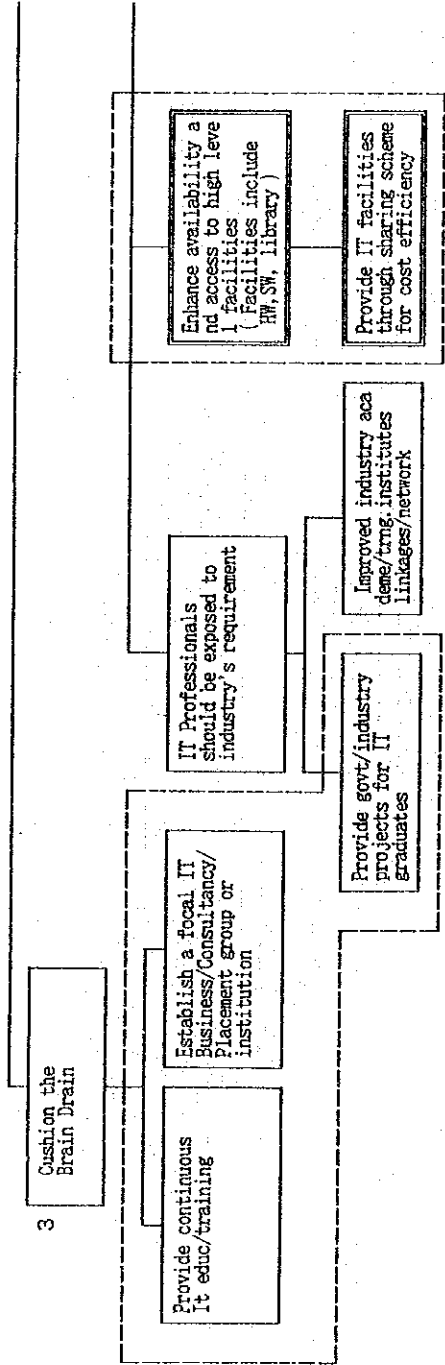
Annex 3 Objective Analysis & Alternative Analysis

Notes



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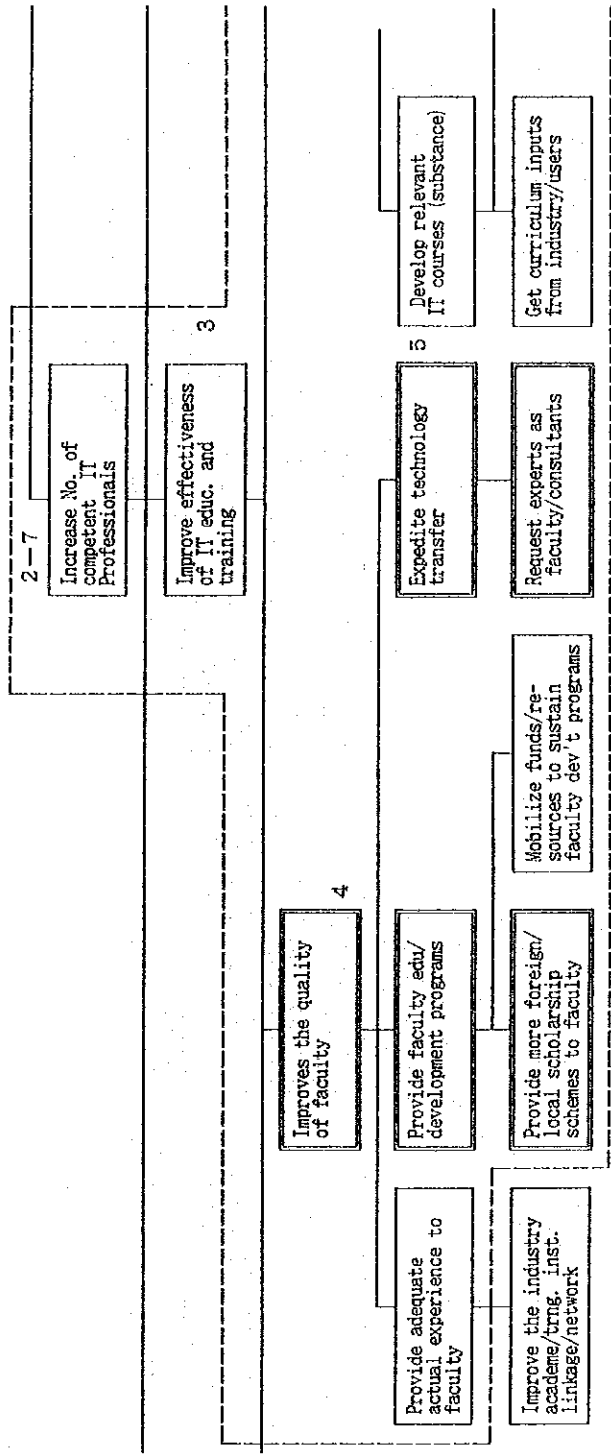


□ : SDI Functions/Activities

□ : Areas of Request from the Philippines side
□ : Areas of Technical Cooperation of the Japanese side

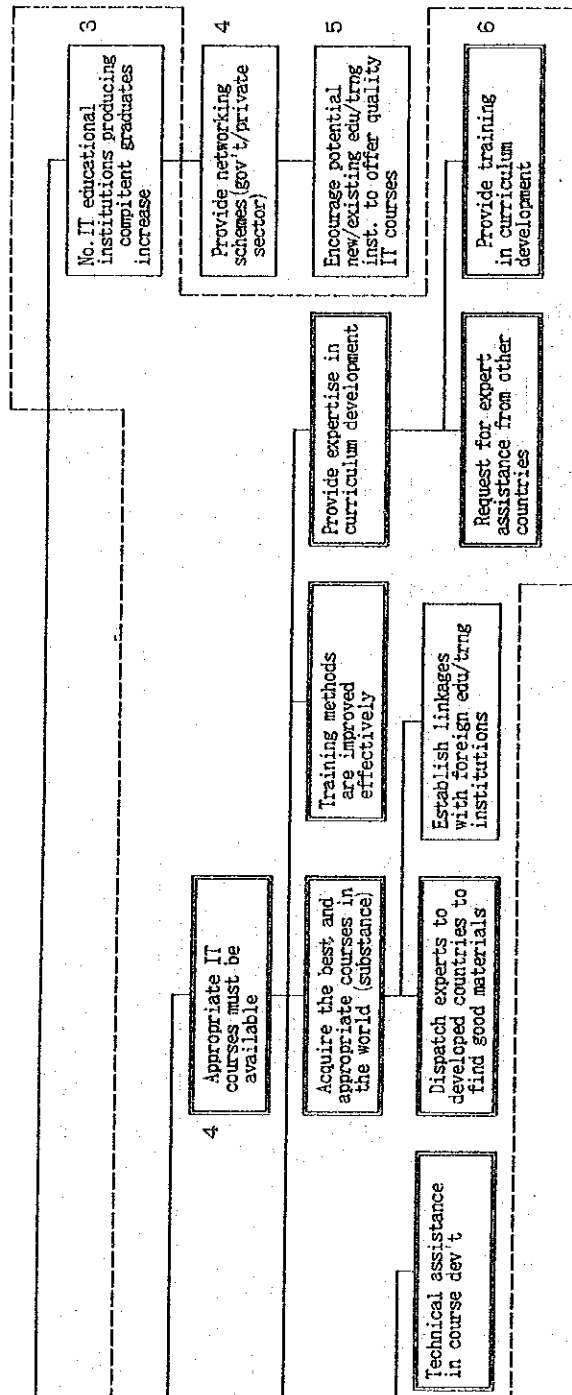
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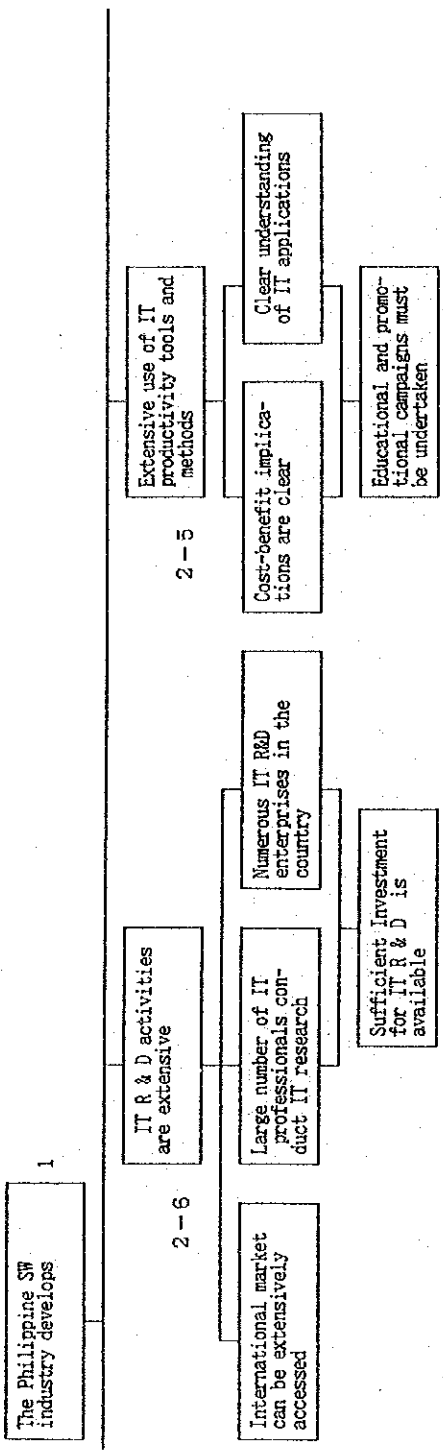


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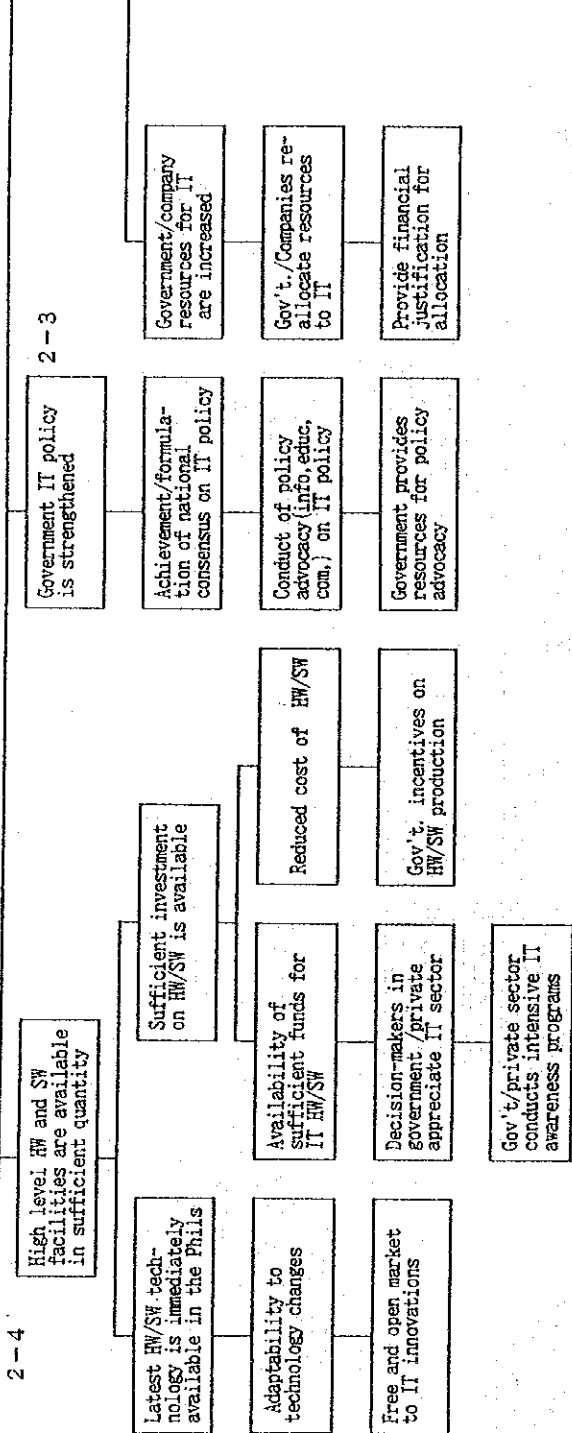


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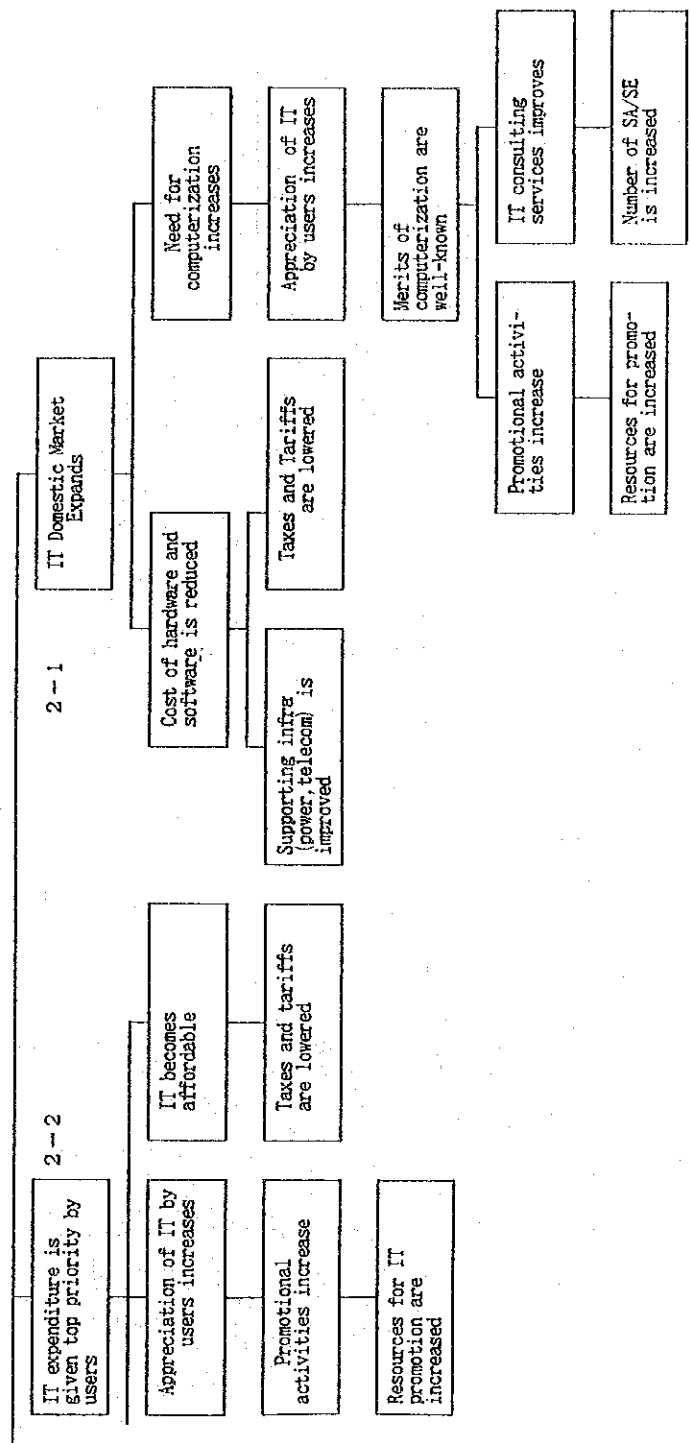
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Narrative Summary	Indicators
<p>Overall Goal To make SDI the catalyst for development of Philippine IT professionals</p>	
<p>Project Purpose High level IT education/training program is provided at SDI</p>	
<p>Outputs 1. High-level facilities are effectively utilized 2. Curriculum is developed/acquired 3. Course materials are developed 4. The quality of SDI staff (faculty) is improved 5. High-level IT courses are implemented</p>	
<p>Activities</p> <ul style="list-style-type: none"> 1-1 Get Technical Team to pick Hardware/Software Directory 1-2 Acquire high level IT facilities 1-3 Train SDI Staff on use of IT facilities 1-4 Market/disseminate availability of IT facilities 1-5 Train users of IT facilities for training purposes 1-6 Understanding for facilities maintaining management 1-7 Maintain/upgrade facilities 1-8 Acquire other training facilities 2-1 Identify industry needs for IT courses 2-2 Request/utilize expert course curriculum developer under the JICA's program 2-3 Study existing IT curriculum for acquisition 2-4 Make a plan of IT course 2-5 Subscribe to major IT publication 2-6 Train IT curriculum developers 3-1 Identify materials needed 3-2 Consultation between faculty & experts on course materials 3-3 Sourcing of new course materials abroad 3-4 Develop course materials 3-5 Acquire the capability to develop materials 3-6 Request/utilize technical assistance on course development under JICA expert dispatch program 4-1 Identify the required quality of faculty 4-2 Select/recruit faculty 4-3 Develop faculty development program 4-4 Request/utilize expert on education/training technology & methods of instruction (MOI) under the JICA expert dispatch program 4-5 Undertake training programs for faculty 4-6 Qualified faculty to be sent abroad for advance training 5-1 Make a plan of recruitment for trainees 5-2 Recruit for trainees 5-3 Implement IT courses 	




Means of Verifications	Important Assumptions
	1. Network of SDI beneficiaries will be established
	1. Trained faculty will be retained at SDI
<p style="text-align: center;">Inputs</p> <p>Term of Cooperation : 5years</p> <p><Philippines></p> <ol style="list-style-type: none"> 1. Allocation of operation cost 2. Assignment of counterpart personnel and staff 3. Allocation of maintenance cost for HW/SW <p><Japan></p> <ol style="list-style-type: none"> 1. Dispatch of Experts 2. Accepting counterpart personnel for training in Japan 3. Provision of machinery and equipment 	<ol style="list-style-type: none"> 1. SDI is consistent with Philippine Technology Direction 2. SDI operations are financially sustainable 3. Appropriate HW/SW is available <p style="text-align: center;">Pre-conditions</p> <ol style="list-style-type: none"> 1. Preparation of SDI space will be completed 2. Appointment of initial SDI Staff

MA

PR

ANNEX 5. HARDWARE/SOFTWARE REQUIREMENTS OF THE PROJECT

IT ASSET	SERVER	WORKSTATION	NETWORKING REQUIREMENTS
Laboratory #1 2 units of Super Spare Servers with 16 units of workstations	UNIX SVR4.x TCP/IP Software NFS Software Management Software for Filesystems disks and backups Infomix Products Online Interactive Debugger SQL Menu Star Forms RDS Hypertext I-NetPC	MS DOS X.X MS Windows X.X TCP/IP version for PC PC NFS	2 units 32-Bit Network Interface Card for the server 16 units 16-bit Network Interface Card 1 unit 16-port Ethernet Stackable Hub
Laboratory #2 2 units of Super Spare Servers with 16 units of Workstations	UNIX SVR4.X TCP/IP Software NFS Software Management Software for Filesystems, disks and backups Oracle Products TCP/IP Protocol Driver Forms Menu SQL Plus	MS DOS X.X MS Windows X.X TCP/IP version for PC PC NFS SQL Report Writer Forms Plus Menu SQL Net	2 units 32-Bit Network Interface Card for the server 16 units 16-bit Network Interface Card 1 unit 16-port Ethernet Stackable Hub
Laboratory #3 2 units of Super Spare Server with 16 units of PC/Workstations	UNIX SVR4.x TCP/IP Software NFS Software Management Software for Filesystems, disks and backups C++ Compiler Portable Network for Unix Server Unix Remote Learning Center SNA 3270 Software for Mainframe Connectivity Mainframe Software for Unix Connectivity	MS DOS X.X MS Windows X.X TCP/IP version for PC PC NFS System Dev Eng'g Methodology	2 units 32-Bit Network Interface Card for the server 16 units 16-bit Network Interface Card 1 unit 16-port Ethernet Stackable Hub
Laboratory #4 2 units of high-end Intel based PC server with 16 units of workstations	Windows NT Advance Server SQL Server Access 1.1 for Windows Master	MS DOS X.X MS Windows X.X MS Windows NT Access Single License Visual Basic for Windows Spreadsheet for Windows Word Processor For Windows PC/NFS Anti-virus Software	2 units 32-Bit Network Interface Card for the server 16 units 16-bit Network Interface Card 1 unit 16-port Ethernet Stackable
Mainframe Server M1760/6 upgrade to M176V10 EVM Facility ECF Firmware	MSP ESA OS, ETC. TCP/IP Software		
Four Class Rooms 20 units of PC's/Workstations (5 units each)		MS DOS X.X MS Windows X.X Electronic Mail Personal Database Wordprocessor Spreadsheet TCP/IP version for PCs PC/NFS	

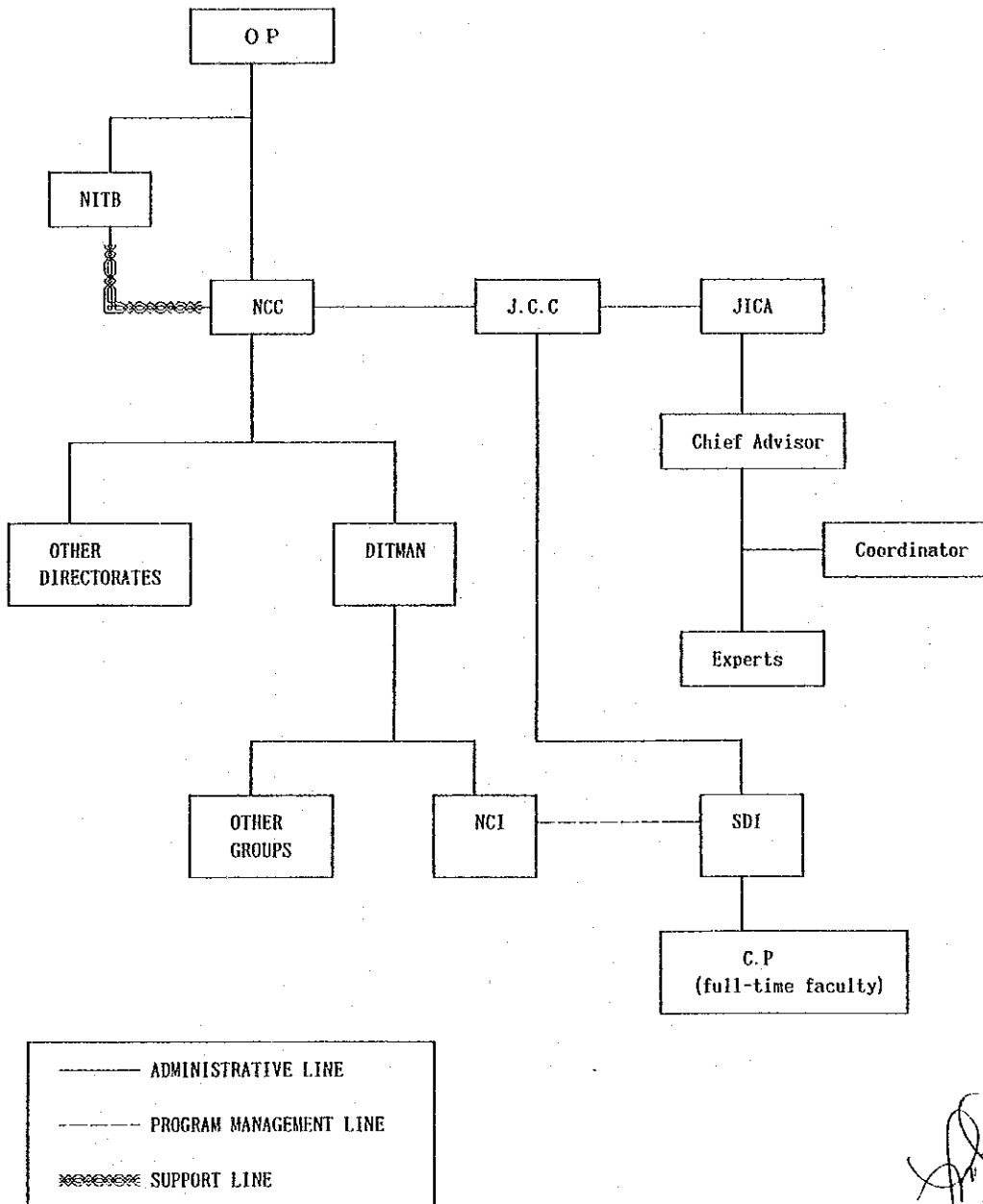
H A R D W A R E	S E R V E R	W O R K S T A T I O N	N E T W O R K I N G R E Q U I R E M E N T S
Faculty Office 2 units of Super Spare Server with 20 Workstations	UNIX SVR4.x TCP/IP Software NFS Software Management Software for Filesystems, disks and backups	MS DOS X.X MS Windows X.X Electronic Mail Personal Database Wordprocessor Spreadsheet Name, Address & Telephone List General Accounting Time Management Facility PC/NFS	2 units 32-bit Network Interface Card for the server 20 units 16-bit Network Interface Card 2 units 16-port Ethernet Stackable Hub
Other Hardware Requirements Laboratories #1, #2, #3 & #4 2 units high-end D/Routers with at least 500Mbits per second "high speed backplane" (please see Network Layout) 4 units 6KVA Online UPS (for servers and routers) 4 units 6KVA switching UPS (for Workstations) 4 units 1200 lpm high speed printers 8 units 132 column Dot matrix printers 4 units Cartridge Magnetic Tape QIC 500 or higher 2 units 2.0GB 4MM Tape System			
Faculty Office 20 units of Notebook PCs 4 units Desktop Laser printers 6 units High Speed laser printer with at least 30 pages per minute 2 units High Speed Photocopier with Stapling and Collating Functions 2 units Ordinary High Speed Photocopier 1 unit Colored Photocopier 3 units Fax Machines			
Education and Training Equipment 1 unit Video Wall for the Auditorium 2 units Barco Vision for the classrooms 1 unit Amiga 4000 with video toaster board and software 3 units Multi-media development workstation 2 units Computer controlled film projection equipment 4 units Computer controlled VHS system 8 units Overhead Projection system 8 units True color PC Projection system 4 units Slide Projection system 8 units Wide inch colored TV sets 2 units Colored Laser Printers			

Annex 6. TENTATIVE IMPLEMENTATION PLAN

Year	1	2	3	4	5
	s	n	r	t	t
	t	d	d	h	h
I. Term of the Project					
II. The Japanese Side					
1. Dispatch of Experts					
1) Long-term experts					
① Chief advisor					
② Coordinator					
③ IT Curriculum Design and Development					
④ Open System with Database Design & Management					
⑤ Data Communication					
2) Short-term experts (if necessity arises)					
2. Provision of Machinery and Equipment		△-Delivery			
3. Training of Philippines Counterpart in Japan					
III. The Philippines side					
1. Establishment of the SDI organization					
2. Allocation of Counterpart Personnel and Staff					
3. Arrangement of Buildings and Facilities					
4. Procurement of Machinery and Equipment					
5. Allocation of Operational Budget					
6. Development /Enhancement of Curriculum and Course Materials					
7. Operation of the Training Courses					

not

ANNEX 7. ORGANIZATION CHART



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ANNEX 8. ALLOCATION PLAN OF COUNTERPART PERSONNEL FOR THE PROJECT

(Unit: Person)

YEAR	1994	1995	1996	1997	1998
	THE SDI STAFF				
Managing Director	1	1	1	1	1
Deputy Managing Director	1	1	1	1	1
Management Services	2	2	4	5	5
General Office Administration Services	3	4	4	5	5
Training : Course Development and Administration	2	2	2	3	4
Faculty	(2)	(2)	(2)	(3)	(4)
IT Information Center	0	1	2	2	2
Faculty					
Full Time/Counterpart Staff	6	9	12	12	12
Part Time	4	28	54	56	56
Total of All Staff	19	48	80	85	86

not

Annex 9. ALLOCATION PLAN OF OPERATIONAL BUDGET

(Unit:1,000 Peso)

Year	1994	1995	1996	1997	1998
NCC Personnel Salaries	1,560	2,002	2,831	3,807	4,758
Part-time Faculty fees	920	3,312	3,588	3,864	4,140
Utilities	240	288	346	415	498
Office Supplies	180	240	300	360	420
Travel & Transportation	60	120	180	180	180
Marketing	60	381	524	623	732
Others	10	20	30	40	50
Total Expenses	3,138	6,363	7,799	9,289	10,778

Net

ANNEX 10. MACHINERY, EQUIPMENT AND MATERIALS PROVIDED BY THE PHILIPPINES

1 mainframe computer system - (FACOM M760)

2 minicomputer systems -HP 3000
-FACOM A50

IT Library --consisting of about 6,500 books, manuals, magazines & journals

Operating supplies and materials

Generator

Airconditioner units

Telephone

Facsimile

Office equipment

Not

ANNEX 11. LIST OF ATTENDANTS OF THE MEETING

The Japanese side

Mr. Yasushi Noto LEADER ,Preliminary Survey Team ,JICA
Mr. Kazuyuki Watanabe MEMBER ,Preliminary Survey Team ,JICA
Mr. Katamitsu Kono MEMBER ,Preliminary Survey Team ,JICA
Mr. Takanori Fukase MEMBER ,Preliminary Survey Team ,JICA
Mr. Atsushi Tasaka MEMBER ,Preliminary Survey Team ,JICA
Mr. Shinboku Miyakawa MEMBER ,Preliminary Survey Team ,JICA
Mr. Shigeru Otake MEMBER ,Preliminary Survey Team ,JICA
Ms. Naomi Okada OBSERVER ,FASID

JICA Philippines Office

Ms. Kyoko Okubo , Assistance Resident Representative

Embassy of Japan

Mr. Norio Nakazawa, First Secretary

JICA Expert

Mr. Nobuyuki Otake

The Philippines Side

National Computer Center

Mr. Fermin Javier, Managing Director

Ms. Cynthia Topacio, Director, Directorate for IT Manpower Development

Ms. Juli Ana Sudario, Information Technology Officer

Department of Trade and Industry

Board of Investment

Mr. Tomas Alcantara, Undersecretary

Mr. Allan Tolentino, Program Officer for Foreign Assisted Project

Mr. Paul Tang, Supervising Investment Specialist

Ms. Gina Cumpas, Senior Investment Specialist

Ms. Susan Corpuz, Senior Investment Specialist

Department of Trade and Industry

Bureau of Export Trade Promotion

Ms. Grace Llaneta, Product Officer

Ms. Pearl Mina, Product Officer

National Economic Development Authority

Ms. Josefina Esguerra, Director, PIS

Mr. Dennis V. del Rosario, Management Information System Staff

Ms. Brenda R. Mendoza, Trade, Industry & Utilities Staff

Mr. Ramon M. Falcon, Social Development Staff

Philippines Software Assosiation

Mr. Gil Guanio ,President

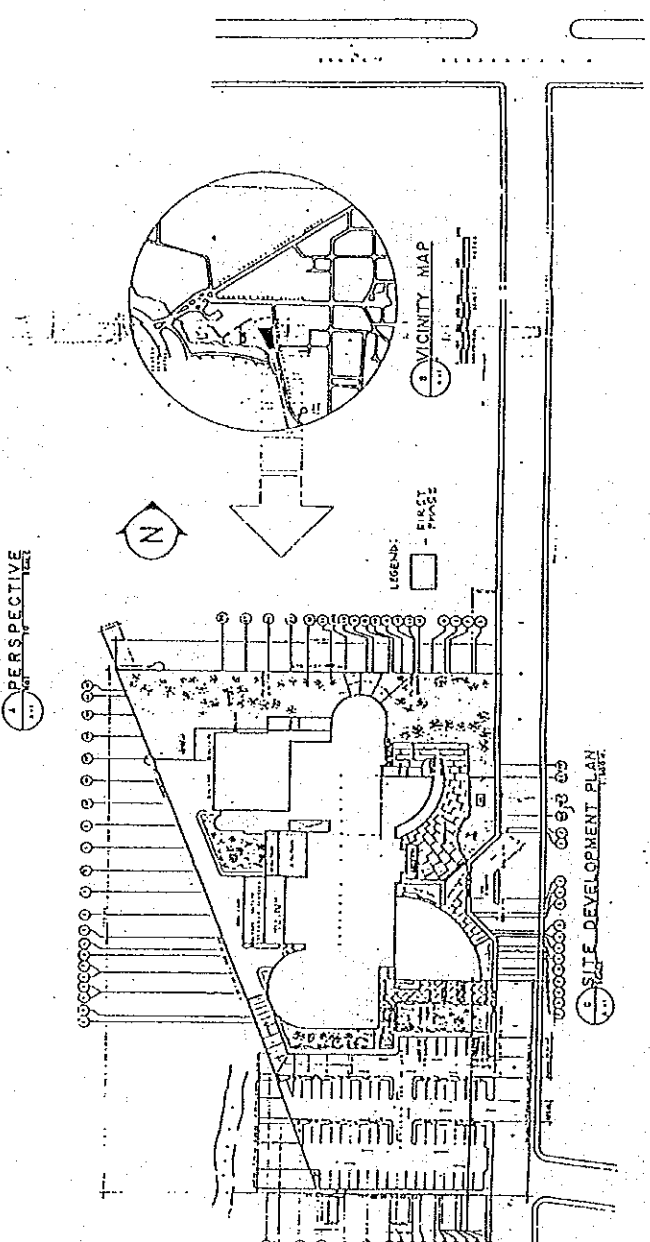
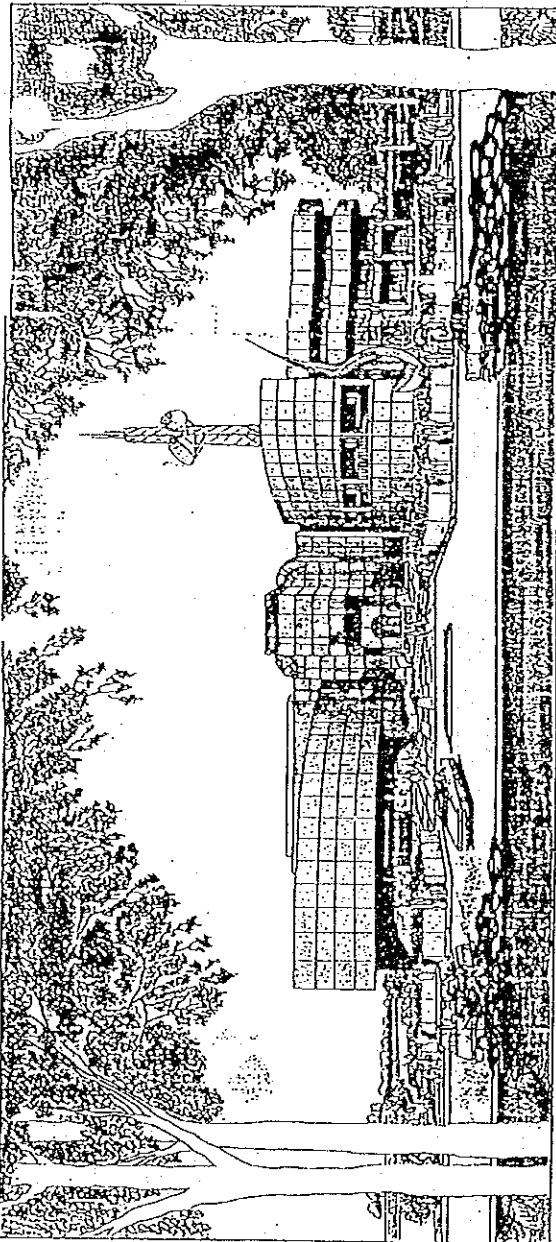
Philippine Computer Society

Ms. Dittas A. Formoso ,Consultant



資料2 プロジェクトサイト建物図面

TABLE OF CONTENTS		Preparation & Construction BY NAME OF THE ARCHITECT OFFICE
ARCHITECTURAL		
<p>101 SITE PLAN (SCALE 1/8" = 1'-0")</p> <p>102 EXTERIOR ELEVATION (SCALE 1/8" = 1'-0")</p> <p>103 INTERIOR ELEVATION (SCALE 1/8" = 1'-0")</p> <p>104 FLOOR PLAN (SCALE 1/8" = 1'-0")</p> <p>105 SECTION (SCALE 1/8" = 1'-0")</p> <p>106 DETAIL (SCALE 1/4" = 1'-0")</p> <p>107 LANDSCAPE ARCHITECTURE (SCALE 1/8" = 1'-0")</p> <p>108 MECHANICAL (SCALE 1/8" = 1'-0")</p> <p>109 ELECTRICAL (SCALE 1/8" = 1'-0")</p> <p>110 SANITARY (SCALE 1/8" = 1'-0")</p>	<p>101 SITE PLAN: J. MAXWELL ARCHITECTS</p> <p>102 EXTERIOR ELEVATION: J. MAXWELL ARCHITECTS</p> <p>103 INTERIOR ELEVATION: J. MAXWELL ARCHITECTS</p> <p>104 FLOOR PLAN: J. MAXWELL ARCHITECTS</p> <p>105 SECTION: J. MAXWELL ARCHITECTS</p> <p>106 DETAIL: J. MAXWELL ARCHITECTS</p> <p>107 LANDSCAPE ARCHITECTURE: J. MAXWELL ARCHITECTS</p> <p>108 MECHANICAL: J. MAXWELL ARCHITECTS</p> <p>109 ELECTRICAL: J. MAXWELL ARCHITECTS</p> <p>110 SANITARY: J. MAXWELL ARCHITECTS</p>	
STRUCTURAL		
<p>201 FOUNDATION PLAN (SCALE 1/8" = 1'-0")</p> <p>202 COLUMN AND BEAM PLAN (SCALE 1/8" = 1'-0")</p> <p>203 WALL AND PARTITION PLAN (SCALE 1/8" = 1'-0")</p> <p>204 FLOOR SLAB PLAN (SCALE 1/8" = 1'-0")</p> <p>205 ROOF PLAN (SCALE 1/8" = 1'-0")</p> <p>206 SECTION (SCALE 1/8" = 1'-0")</p>	<p>201 FOUNDATION PLAN: J. MAXWELL ARCHITECTS</p> <p>202 COLUMN AND BEAM PLAN: J. MAXWELL ARCHITECTS</p> <p>203 WALL AND PARTITION PLAN: J. MAXWELL ARCHITECTS</p> <p>204 FLOOR SLAB PLAN: J. MAXWELL ARCHITECTS</p> <p>205 ROOF PLAN: J. MAXWELL ARCHITECTS</p> <p>206 SECTION: J. MAXWELL ARCHITECTS</p>	
ELECTRICAL		
<p>301 POWER AND LIGHTING PLAN (SCALE 1/8" = 1'-0")</p> <p>302 COMMUNICATIONS PLAN (SCALE 1/8" = 1'-0")</p> <p>303 TELEPHONE PLAN (SCALE 1/8" = 1'-0")</p> <p>304 TELEVISION PLAN (SCALE 1/8" = 1'-0")</p> <p>305 AUDIO PLAN (SCALE 1/8" = 1'-0")</p> <p>306 VIDEO PLAN (SCALE 1/8" = 1'-0")</p> <p>307 SECURITY PLAN (SCALE 1/8" = 1'-0")</p>	<p>301 POWER AND LIGHTING PLAN: J. MAXWELL ARCHITECTS</p> <p>302 COMMUNICATIONS PLAN: J. MAXWELL ARCHITECTS</p> <p>303 TELEPHONE PLAN: J. MAXWELL ARCHITECTS</p> <p>304 TELEVISION PLAN: J. MAXWELL ARCHITECTS</p> <p>305 AUDIO PLAN: J. MAXWELL ARCHITECTS</p> <p>306 VIDEO PLAN: J. MAXWELL ARCHITECTS</p> <p>307 SECURITY PLAN: J. MAXWELL ARCHITECTS</p>	
MECHANICAL		
<p>401 MECHANICAL PLAN (SCALE 1/8" = 1'-0")</p> <p>402 HEATING PLAN (SCALE 1/8" = 1'-0")</p> <p>403 COOLING PLAN (SCALE 1/8" = 1'-0")</p> <p>404 VENTILATION PLAN (SCALE 1/8" = 1'-0")</p> <p>405 EXHAUST PLAN (SCALE 1/8" = 1'-0")</p>	<p>401 MECHANICAL PLAN: J. MAXWELL ARCHITECTS</p> <p>402 HEATING PLAN: J. MAXWELL ARCHITECTS</p> <p>403 COOLING PLAN: J. MAXWELL ARCHITECTS</p> <p>404 VENTILATION PLAN: J. MAXWELL ARCHITECTS</p> <p>405 EXHAUST PLAN: J. MAXWELL ARCHITECTS</p>	
FIRE PROTECTION		
<p>501 FIRE PROTECTION PLAN (SCALE 1/8" = 1'-0")</p> <p>502 SMOKE EXHAUST PLAN (SCALE 1/8" = 1'-0")</p>	<p>501 FIRE PROTECTION PLAN: J. MAXWELL ARCHITECTS</p> <p>502 SMOKE EXHAUST PLAN: J. MAXWELL ARCHITECTS</p>	
SANITARY		
<p>601 SANITARY PLAN (SCALE 1/8" = 1'-0")</p> <p>602 PLUMBING PLAN (SCALE 1/8" = 1'-0")</p>	<p>601 SANITARY PLAN: J. MAXWELL ARCHITECTS</p> <p>602 PLUMBING PLAN: J. MAXWELL ARCHITECTS</p>	
ELECTRICAL		
<p>701 ELECTRICAL PLAN (SCALE 1/8" = 1'-0")</p> <p>702 WIRING DIAGRAM (SCALE 1/8" = 1'-0")</p>	<p>701 ELECTRICAL PLAN: J. MAXWELL ARCHITECTS</p> <p>702 WIRING DIAGRAM: J. MAXWELL ARCHITECTS</p>	
MECHANICAL		
<p>801 MECHANICAL PLAN (SCALE 1/8" = 1'-0")</p> <p>802 HEATING PLAN (SCALE 1/8" = 1'-0")</p> <p>803 COOLING PLAN (SCALE 1/8" = 1'-0")</p> <p>804 VENTILATION PLAN (SCALE 1/8" = 1'-0")</p> <p>805 EXHAUST PLAN (SCALE 1/8" = 1'-0")</p>	<p>801 MECHANICAL PLAN: J. MAXWELL ARCHITECTS</p> <p>802 HEATING PLAN: J. MAXWELL ARCHITECTS</p> <p>803 COOLING PLAN: J. MAXWELL ARCHITECTS</p> <p>804 VENTILATION PLAN: J. MAXWELL ARCHITECTS</p> <p>805 EXHAUST PLAN: J. MAXWELL ARCHITECTS</p>	
NATIONAL COMPUTER CENTER		
A-1		



FRANCISCO J. MAXWELL ARCHITECTS
CONSULTANTS

NATIONAL COMPUTER CENTER
PERPECTIVE, THIS VIEW FROM NORTHWEST CORNER OF OFFICE

LEGEND:
□ - PARKING

VICINITY MAP

SCALE: 1/8" = 1'-0"

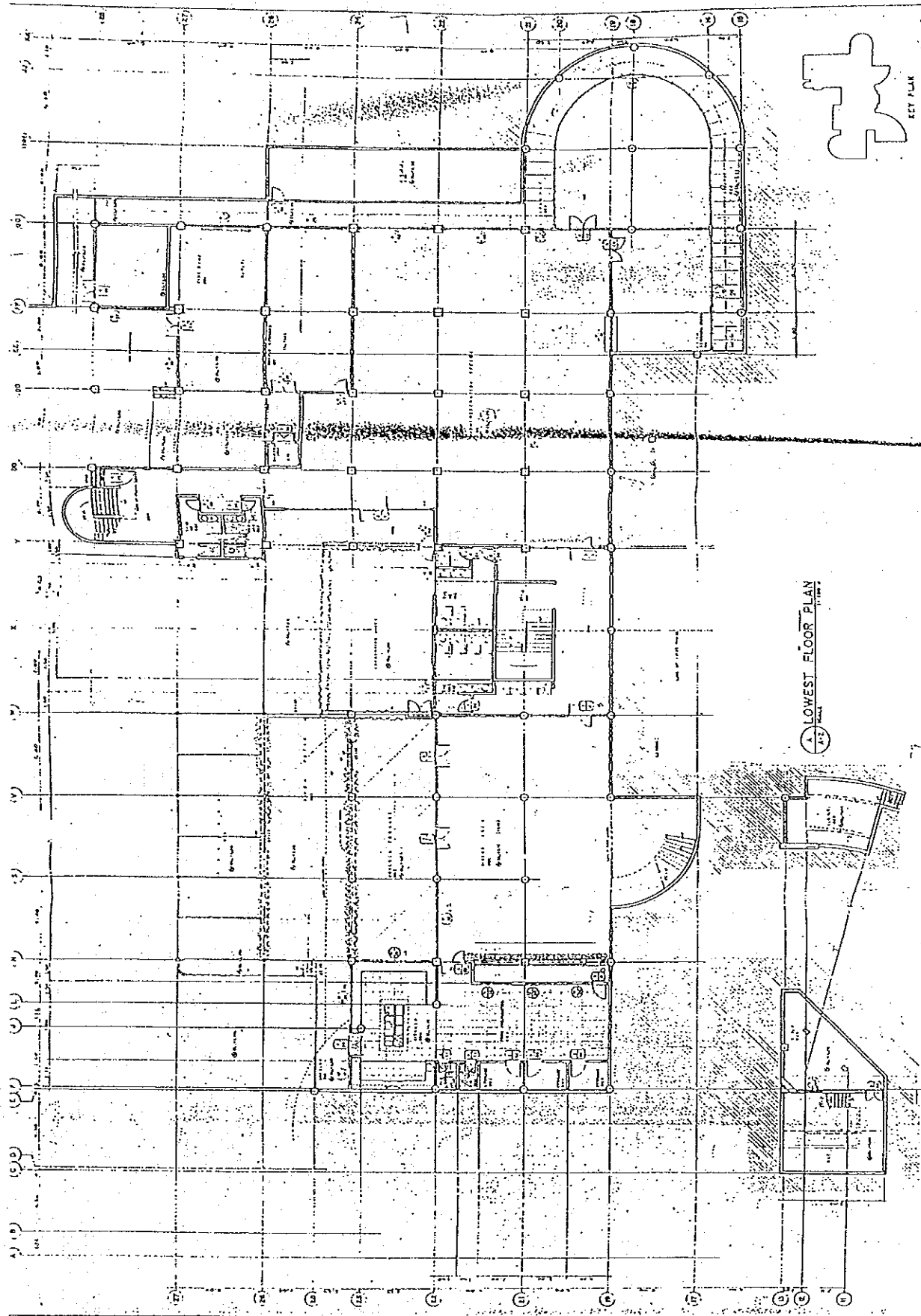
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PROJECT NO. 100-100000

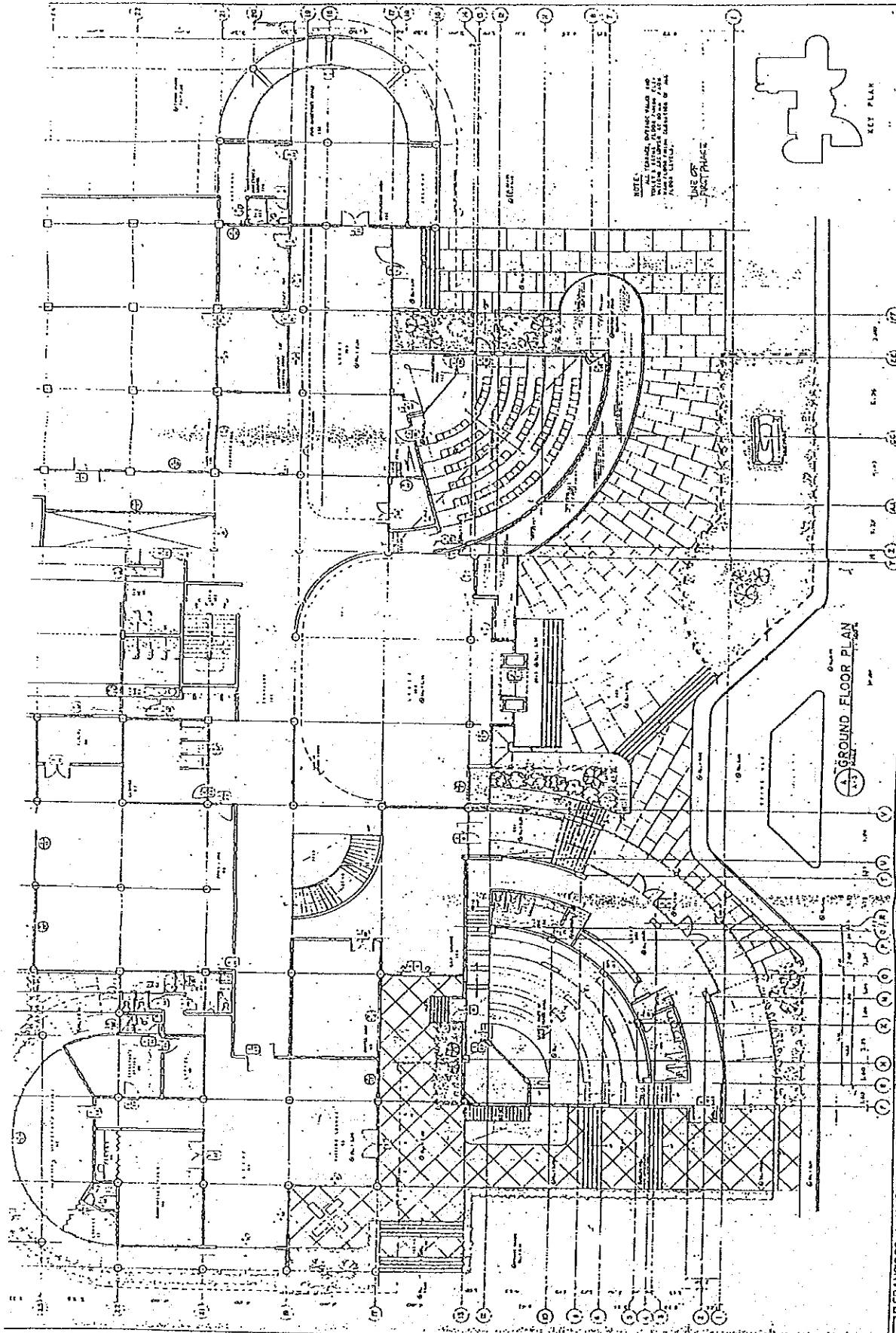
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CHECKED BY: J. MAXWELL ARCHITECTS

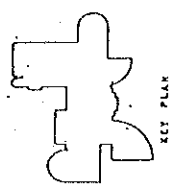
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	NATIONAL COMPUTER CENTER LEVEL: FLOOR PLAN			



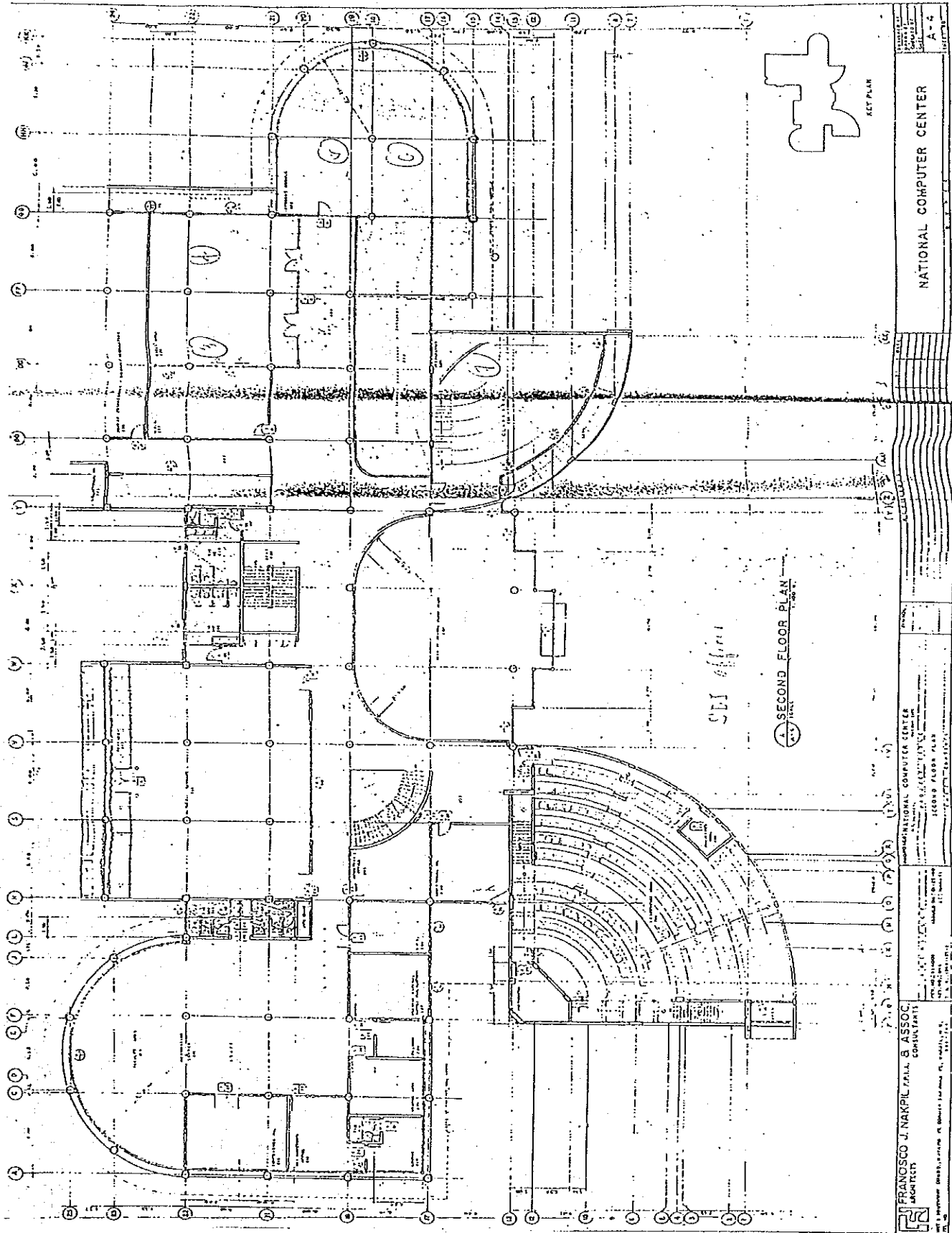
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UNLESS OTHERWISE SPECIFIED.



SEE PLAN

GROUND FLOOR PLAN

<p>FRANCISCO J. NAKPIL & ASSOC. ARCHITECTS CONSULTANTS</p>	
<p>NATIONAL COMPUTER CENTER</p>	
<p>A-3</p>	

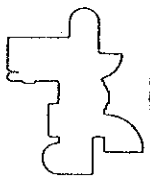
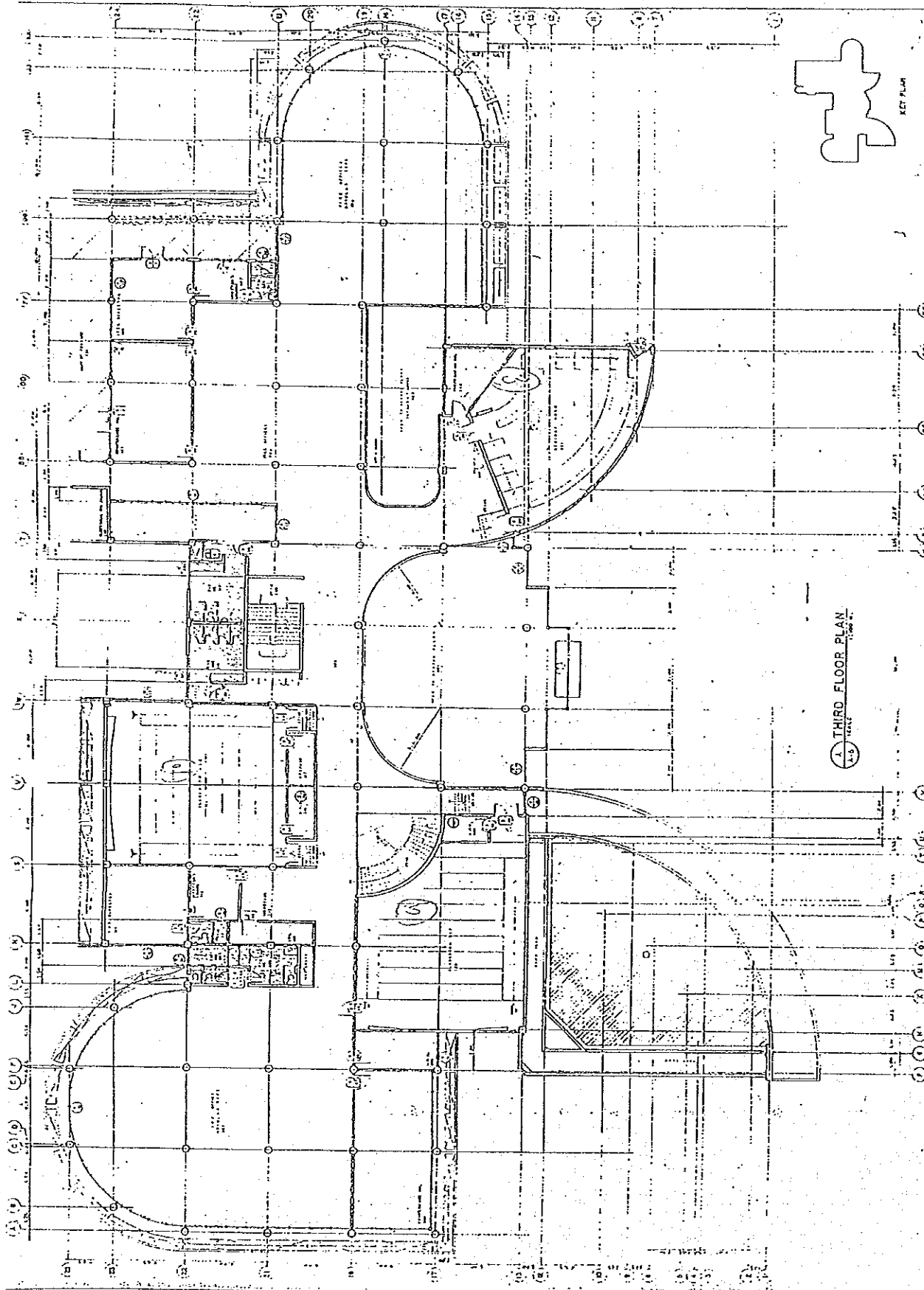


SCALE
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 A-4

NATIONAL COMPUTER CENTER

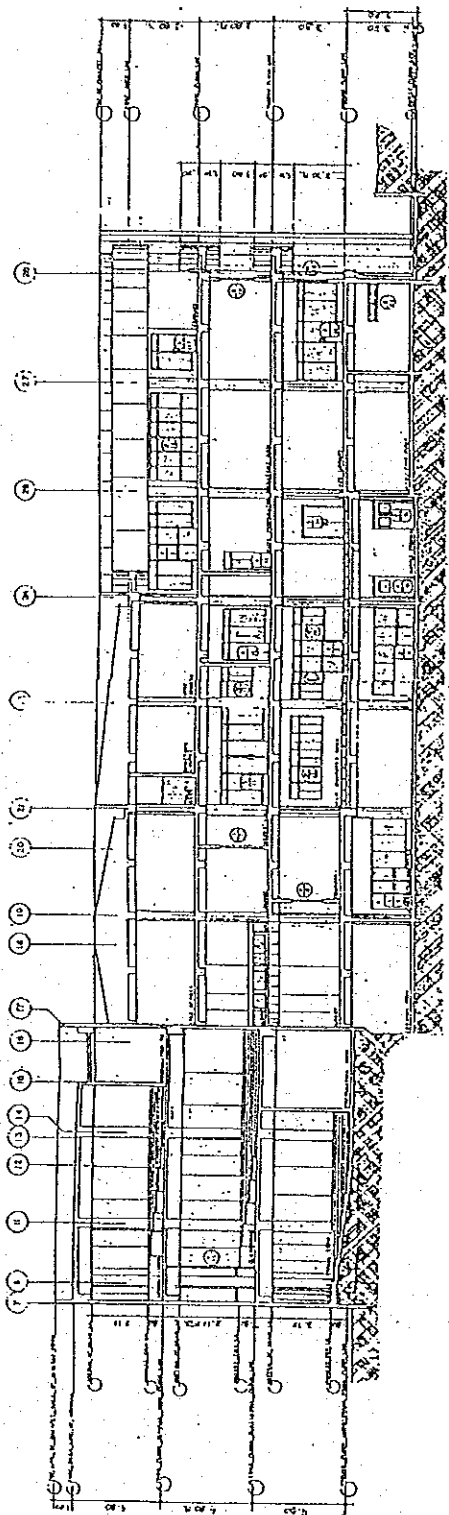
FRANCISCO J. NAKPIL ZALA, B. ASSOC.
 ARCHITECT
 CONSULTANTS
 1000 B ALABAMA PLACE
 SAN FRANCISCO, CALIF. 94104
 PHONE 432-1100
 CABLE 432-1100

FRANCISCO J. NAKPIL ZALA, B. ASSOC.
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 CONSULTANTS
 1000 B ALABAMA PLACE
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 CABLE 432-1100

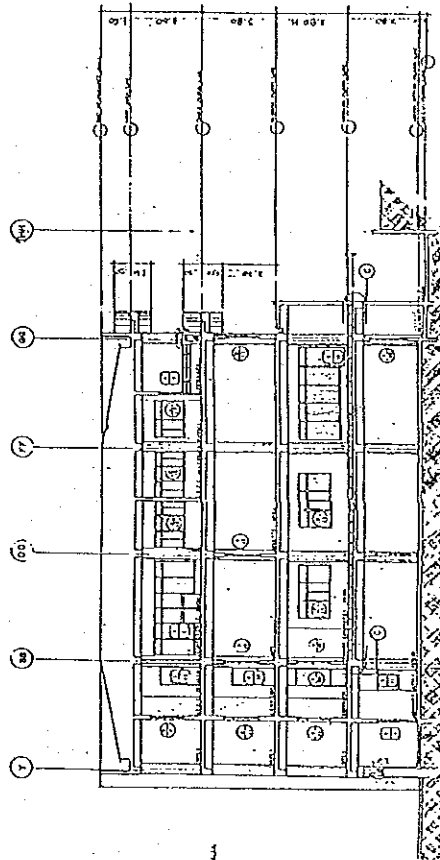


3 THIRD FLOOR PLAN
1966

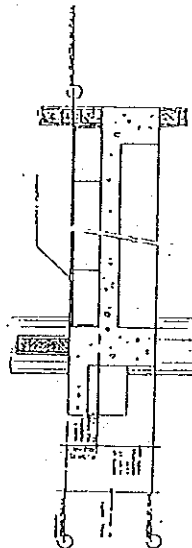
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SECTION THROUGH TOWER

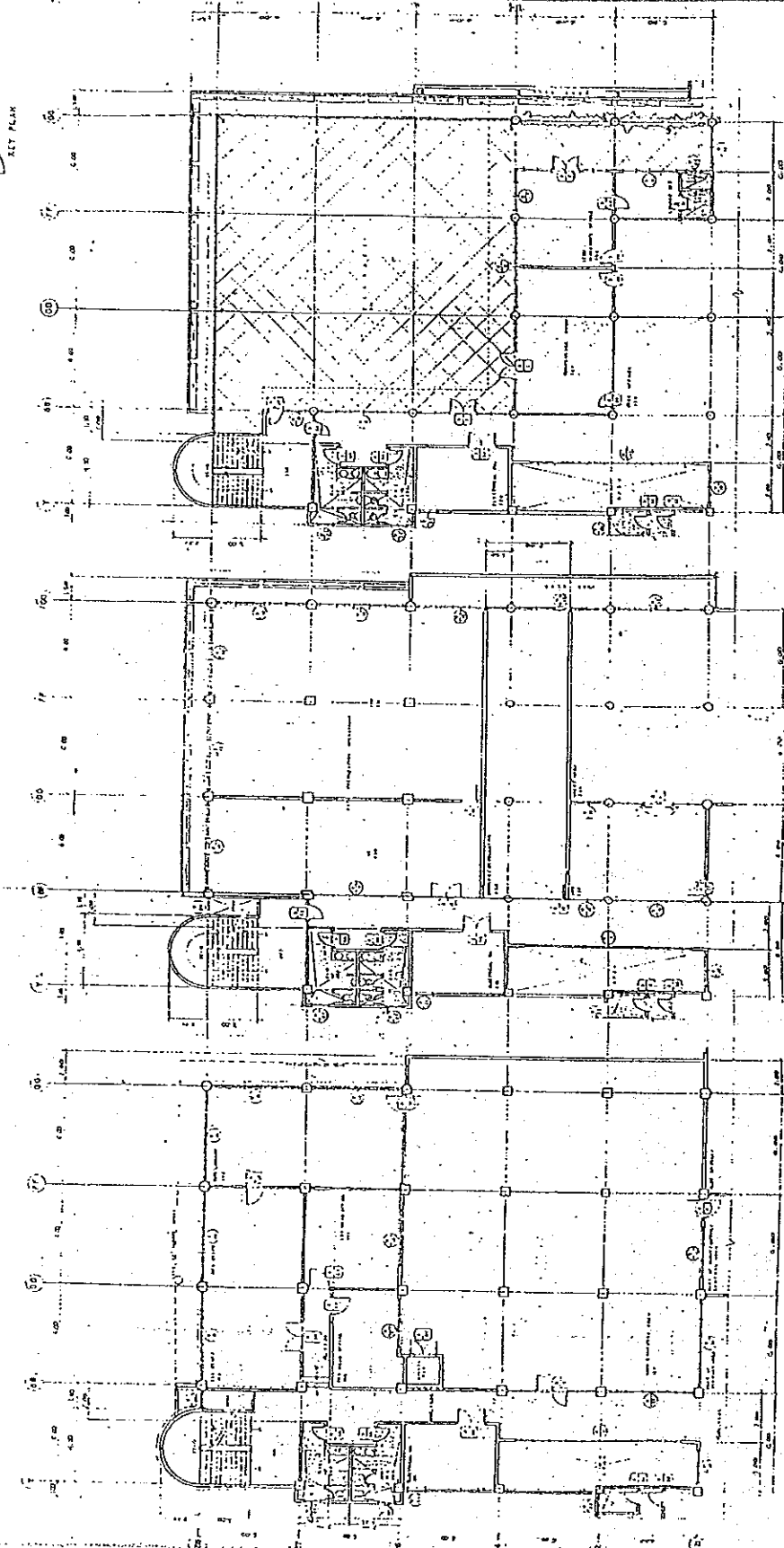
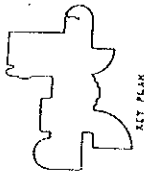


SECTION THROUGH TOWER



DETAIL

FRANCISCO J. NAKPILIZIAN ASSOC. ARCHITECTS 1000 CALIFORNIA STREET, SUITE 1000, SAN FRANCISCO, CALIF. 94108 TEL. 415.774.1111 FAX. 415.774.1112		NATIONAL COMPUTER CENTER 1000 CALIFORNIA STREET, SUITE 1000, SAN FRANCISCO, CALIF. 94108 TEL. 415.774.1111 FAX. 415.774.1112	
PROJECT NO. 1000 CALIFORNIA STREET, SUITE 1000, SAN FRANCISCO, CALIF. 94108 DRAWING NO. 1000 CALIFORNIA STREET, SUITE 1000, SAN FRANCISCO, CALIF. 94108 DATE 10/15/88	SHEET NO. 1000 CALIFORNIA STREET, SUITE 1000, SAN FRANCISCO, CALIF. 94108 TOTAL SHEETS 1000 CALIFORNIA STREET, SUITE 1000, SAN FRANCISCO, CALIF. 94108	CLIENT ARCHITECT ENGINEER CONTRACTOR SUBCONTRACTOR MANUFACTURER DISTRIBUTOR OTHER	PROJECT NO. DRAWING NO. DATE

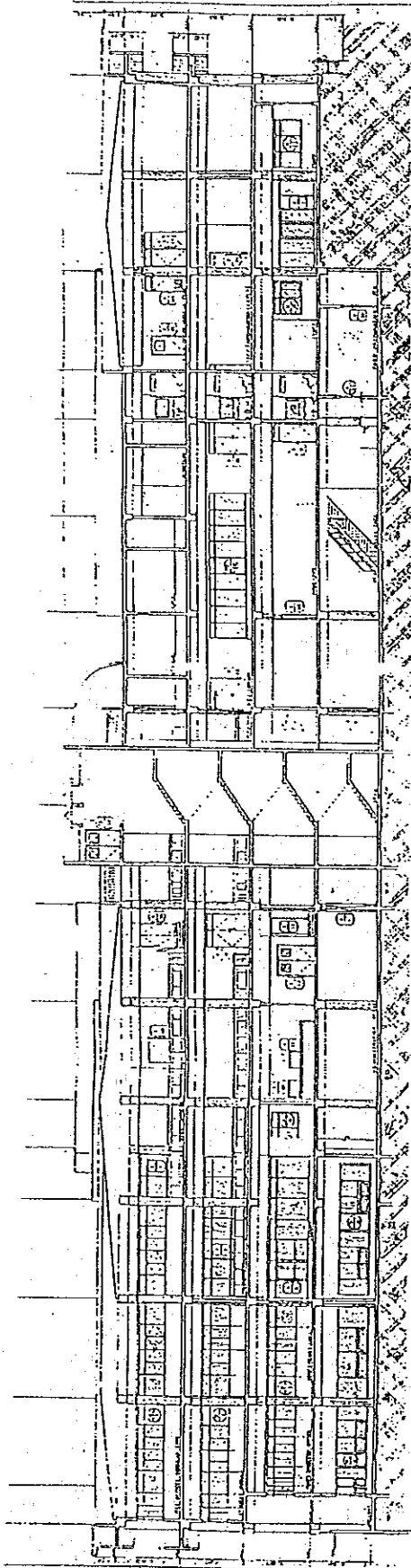


THIRD FLOOR PLAN
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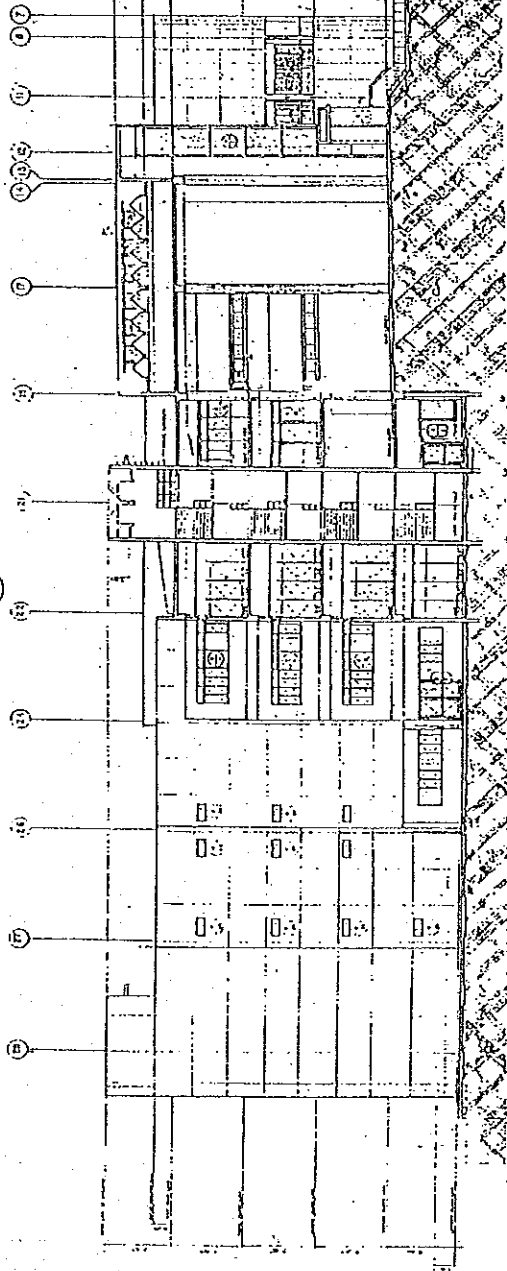
SECOND FLOOR PLAN
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GROUND FLOOR PLAN
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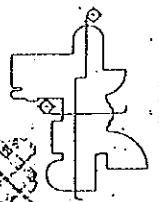
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PROJECT: NATIONAL COMPUTER CENTER ADDRESS: 1000 CALIFORNIA STREET, SAN FRANCISCO, CALIF.		DATE: 1968	
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SHEET NO.: A-7		CITY: SF	



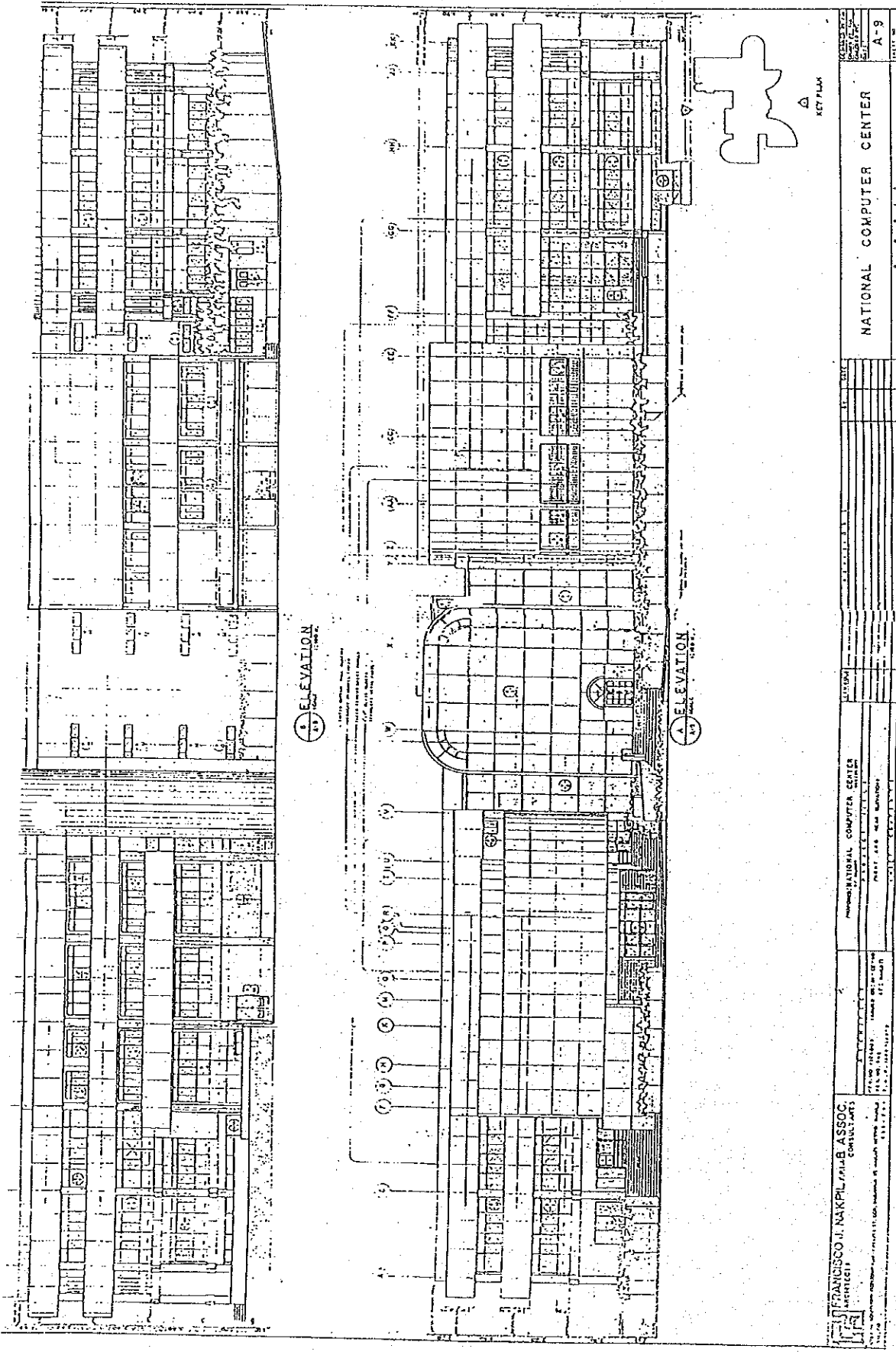
B SECTION
1/4" = 1'-0"



A SECTION
1/4" = 1'-0"



<p>FRANCISCO J. NAKPIL & ASSOC. ARCHITECTS CONSULTANTS 1075 CALIFORNIA STREET, SUITE 1000, SAN FRANCISCO, CALIF. 94108 TELEPHONE 774-1100</p>	<p>NATIONAL COMPUTER CENTER SAN FRANCISCO, CALIF.</p>	<p>DATE: 1967 DRAWN: J. NAKPIL CHECKED: J. NAKPIL</p>	<p>PROJECT NO. 1075 SHEET NO. 1</p>
	<p>NATIONAL COMPUTER CENTER</p>		



DATE: 12/15/66
 DRAWN BY: J. NAKPL
 CHECKED BY: J. NAKPL
 TITLE: NATIONAL COMPUTER CENTER
 SHEET NO: A-9

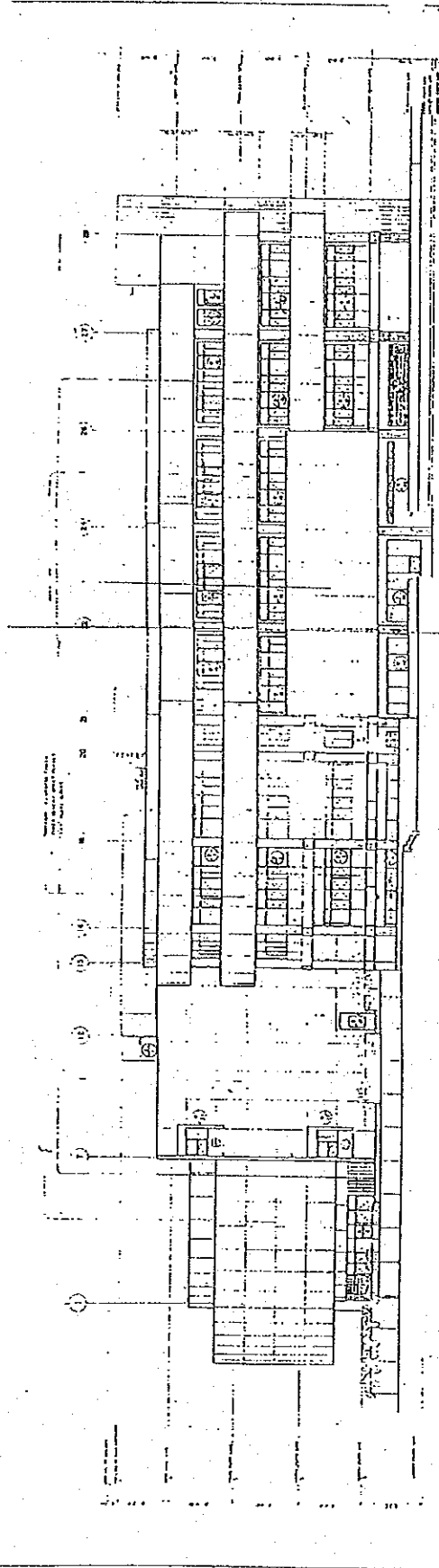
FRANCISCO J. NAKPL ARCHT. ASSOC.
 ARCHITECTS

1200 CALIFORNIA STREET, SUITE 100, SAN FRANCISCO, CALIF. 94109
 PHONE: 398-1111 FAX: 398-1112
 PROJECT NO. 66-100

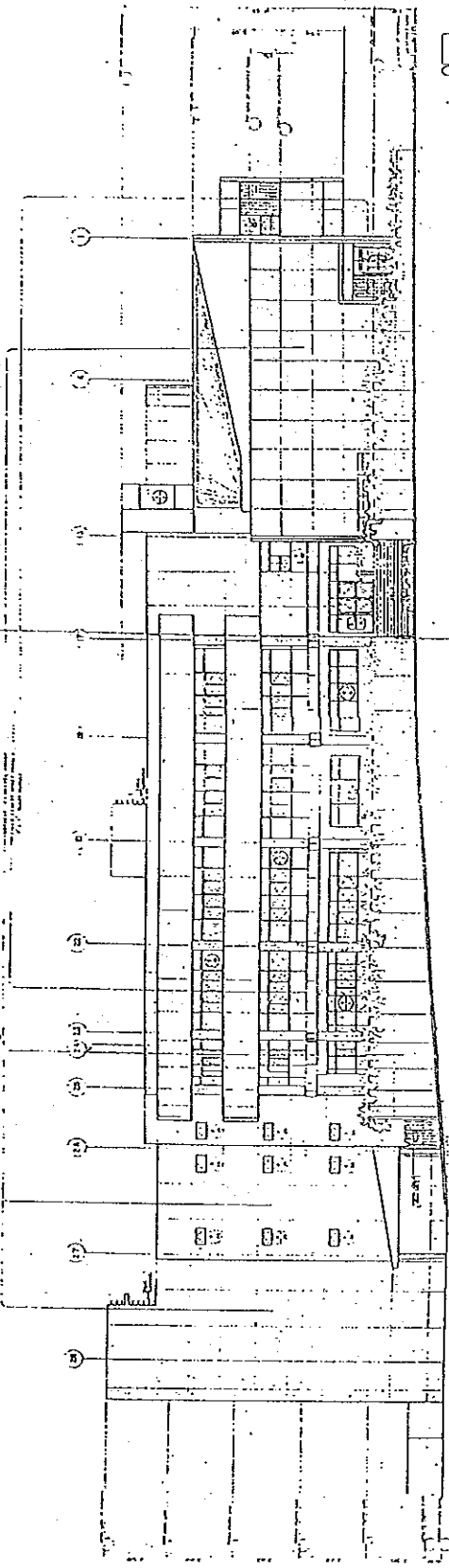
NATIONAL COMPUTER CENTER

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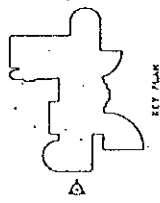
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ELEVATION
SCALE 1/8" = 1'-0"



ELEVATION
SCALE 1/8" = 1'-0"



<p>FRANCISCO J. NAXPIL & ASSOC. ARCHITECTS</p> <p>1000 MARKET STREET, SUITE 1000 SAN FRANCISCO, CALIF. 94102 TELEPHONE: 398-1100</p>	<p>PROJECT: NATIONAL COMPUTER CENTER LOCATION: 1000 MARKET STREET, SAN FRANCISCO, CALIF.</p>	<p>DATE: 11/15/68</p>
	<p>DESIGNED BY: FRANCISCO J. NAXPIL & ASSOCIATES</p>	<p>SCALE: AS SHOWN</p>

COURSE DESCRIPTION

For IT Professionals:

PROGRAM LOGIC FORMULATION (156 hours/7 weeks, including lecture and workshop)

The Program Logic Formulation (PLF) course aims to develop the trainee's skill in designing solutions to various data processing application problems through the institution and practice of the procedures, tools, and techniques of computer science applicable to computer programming. It also disciplines the students to develop structured program designs using a pseudo-language developed by the NCI called the Procedure Description Language (PDL). PLF serves as entry point to a series of courses for IT Professionals at the National Computer Institute.

Course Contents:

- IT Concepts
- Program Development Process
- Structured Programming
- Procedure Description Language (PDL)
- Data Structures
- Data Representation
- String Manipulation
- Table Handling
- File Handling

Entry Qualifications:

A graduate of a four (4) year course and must have passed the NCI Qualifying Examination.

COMPUTER OPERATIONS COURSE (88 hrs./4.4 weeks, excluding workshop/case presentation)

The course aims to provide the participants with sufficient skills in computer operation in a mainframe environment. It shall also provide exposure to the various standards in operation, system software concepts and job processing procedures through substantial hands-on computer operation experience.

Course Contents:

- Installation Standards in Computer Operations
- Hardware Operations Fundamentals
- Systems Software Architecture and Utilization

Entry Qualifications:

A graduate of a four (4) year course.

Must have taken the NCI Qualifying Examination.

COBOL PROGRAMMING

(112 hrs./5 weeks, including lecture and workshop)

COBOL is the most widely used language for business applications and commercial data processing. With file manipulation as one of its strongest features, it is very easy to maintain and update. The COBOL course is designed to provide the participant with a general working knowledge of COBOL programming with emphasis on the structured program design. The course provides first-hand experience in COBOL programming utilizing the mainframe computer system of NCC.

Course Contents:

- Stages in Programming Cycle
- Basic Concepts in COBOL 85
- Coding Specifications and Format Notations
- COBOL Divisions
- Special Utilities
- Data Representation
- Table Handling
- File Handling
- FACOM M760 Orientation

Entry Qualifications:

Must be a bachelor's degree holder, must have passed the NCI qualifying exam for programming, and must have/be any of the following:

- Passed the NCI Program Logic Formulation Course
- Have at least six (6) months actual programming experience as certified by the company
- A graduate of Bachelor of Science in Computer Science

C-LANGUAGE PROGRAMMING

(108 hrs./5 weeks, including lecture & workshop)

C-Language features economy of expression, modern control flow and data structures, and a rich set of operators. Compared to other languages, C is more flexible in performing various tasks and is popular among software developers. Although a high-level language, C is ideally suited for writing programs that deal closely with the computer hardware. This course provides the trainee with techniques in developing, coding, testing, and debugging structured and modular C programs, and first-hand programming experience utilizing IBM's AIX operating system running on the RISC System 6000.

Course Contents:

- Elements of C-Language
- Expressions and Statements
- Arrays and Strings
- Special Features of C
- Overview of Functions

- Interactive I/O Statement
- Bit Operations
- File Handling
- Orientation on UNIX/AIX and the IBM RISC System 6000

Entry Qualifications:
(Same as COBOL Programming)

INTRODUCTION TO STRUCTURED SYSTEMS ANALYSIS AND DESIGN
(80 hours/4 weeks, including lecture and workshop)

Effective systems analysis has always been considered a critical component in the development of successful information systems. This course provides an overview of structured methodologies that facilitate the development of a new system that meets the user's needs.

Course Contents:

- Basic Systems Concepts
- Intro to Systems Analysis
- Intro to Computer Based Design

Entry Qualifications:

- A graduate of a four (4) year course and must have passed the NCI Qualifying Examination

~~Programme is available in the following countries:~~
~~Canada, USA~~

STRUCTURED SYSTEMS ANALYSIS AND DESIGN

(200 hours/14 weeks, including lecture and workshop)

Effective systems analysis is critical in the development of successful information systems. In some organizations, the impact of *IT* has been moderate or unnoticeable due to the lack of understanding of both machine and human information systems. The Structured Systems Analysis and Design course (SSAD) aims to provide the basic disciplines of the IS profession and the understanding of the importance of effective systems analysis even in the face of the increased emphasis on end-user computing, third-party systems, CASE and other developments in *IT*. It covers topics which will enable the participants to analyze an organization's information requirements in relation to its resources, conceptualize a system that suits these requirements and resources, and finally translate this into a detailed computer based system design. The course is divided into three (3) modules:

Module I : Part I - Systems Analysis and Design Fundamentals

Course Contents:

- Basic Systems Concepts
- The Systems Development Cycle
- The Systems Analysis and Design Project
- Analyzing the Existing System
- System Documentation

Part II - Feasibility Study of Computer-based Solutions

- Steps in Conducting the Systems Feasibility Study
- The Data Flow Diagram
- Modelling the Existing System
- Evaluation of Alternative Solutions

Module II - Systems Requirements Specifications

Course Contents:

- Developing the Logical Model of the Proposed System
- The User Interface
- Procedure Design
- System Implementation Planning
- Analysis and Design Trends and Issues

Module III - Information Systems Design

Course Contents:

- System Design Overview
- Detailed System Design
- Designing the System Data Base
- Implementation Considerations

Entry Qualifications:

Must be a bachelor's degree holder and must have passed the NCI qualifying exams for programming and systems analysis and design; and must have/be any of the following:

- a. Passed the NCI Program Logic Formulation Course and one programming language (i.e. COBOL, PASCAL, C, etc.)
- b. Have at least one (1) year actual programming experience as certified by the company
- c. Practicing systems analyst as certified by the company
- d. Passed the Programming Proficiency Examination

NOTE:

Applicants in the managerial level whose interest is limited to Module I need not have the entry qualifications mentioned. However, proof of employment status/position is required.

DATA COMMUNICATIONS

(40 hours/2 weeks, including lecture and workshop)

Data communications is an assembly of various technologies that enables the exchange of information by means of an interconnecting communication link. It has now become a sought after technology in the pursuit of the competitive edge by organizations. This course is designed to provide the participants with a basic understanding of how data is

Entry Qualifications:

Programmers or systems analysts

RISC SYSTEMS ADMINISTRATION
(60 hours/3 weeks, including lecture & workshop)

The course deals with the installation and maintenance of IBM AIX Version 3. It covers a more detailed discussion on the AIX Version 3 facilities provided for systems administration and control of the RISC System/6000.

Course Contents:

- Introduction
- Editing and Printing
- Files and Directories
- Workstation Implementation
- Systems Administration
- Shell Programming

Entry Qualifications:

System administrators or programmers responsible for AIX system installation, implementation and management.

FUNDAMENTALS OF UNIX/AIX
(40 hours/2 weeks)

This seminar is designed for prospective users of the UNIX/AIX operating system. The

course provides an overview of the operating system and file structure. As a whole, the seminar provides the needed knowledge and skills to enable the participant to interact with the operating system.

Course Contents:

- Structure of the UNIX/AIX Operating System
- Characteristics of the System
- Interactive Shell Commands
- Creation, Editing and Manipulation of ASCII Text Files
- Access and File Manipulation
- Shell Programming

Entry Qualifications:

Programmers or systems analysts with at least six (6) months programming experience.

FUNDAMENTALS OF UNIX AND C
(60 hrs./2 weeks, including lecture and workshop)

This course provides an overview of the UNIX system and C-Language. Designed primarily for programmers and analysts, it aims to develop programming skills in C. It commences with a brief description of UNIX development, its characteristics and features, and covers users commands, shell programming and the basic elements of C-Language.

Course Contents:

- Introduction to UNIX System
- The UNIX Text Editor
- Introduction to Shell Programming
- Basic C-Language
- Special Features of C-Language

Entry Qualifications:

(Same as Relational Database Design)

IS PROJECT MANAGEMENT

(40 hours/2 weeks)

The IS Project Management Seminar provides an overview of the range of responsibilities of project management, problems and solutions, as well as tools and techniques applicable to planning, scheduling, estimating and correcting deviations to achieve the project objectives. The course uses the case study approach to provide the participants with an application of management methods and techniques in handling the development and maintenance of information systems projects.

Course Contents:

- Why IS Projects Fail
- Motivating and Leading the Team
- Planning Tools and Techniques
- Project Planning
- Project Control
- Reporting and Reviewing Progress

Entry Qualifications:

IS Project Manager, Systems Analyst, or IT Officer.

For IT Users:

OFFICE SYSTEMS

(160 hrs./4 weeks, including lecture and workshop)

The course is composed of four (4) modules, basically user-oriented, the emphasis of which is to make office systems easier, more efficient and more responsive to the needs of the organization and its clientele specifically through the PC software package and office productivity tools.

Course Content:

- Overview of Office Systems
- Overview of Office Automation
- Basic Computer Concepts
 - Definition of terms
 - Basic DOS Commands
- Text Preparation and Graphic Presentation
- Financial Preparation
- File Management

Entry Qualifications:

Second year college/at least 6 months working experience or 60 college units.

For Managers:

**EXECUTIVE DEVELOPMENT SEMINAR
(EDS)**

EDS-Level 1

This will be a half-day *IT* orientation seminar designed for high level government officers. It aims to provide them with an ample level of awareness about the strategic applications of *IT* in organizations to enable the participants to understand and appreciate its importance. The seminar will focus on the use and impact of *IT* in the achievement of an agency's/organization's mission and goals. It shall also provide the participants with an overview of the latest *IT* products and solutions.

Course Contents:

- Strategic Value of Information
- Information Systems Concepts
- Introduction to Information Technology
- IT Trends and Options
- IT in Government
- IT Policies and Guidelines

Entry Qualifications:

High-level decision-makers such as Secretaries as well as Directors.

EDS-Level 2

This will be a three half-day session seminar geared at developing appreciation for *IT* among Division Chiefs and those belonging to this level of management. It will cover the same topics/subjects as with Level 1, however, these will be dealt with in more detail. As such, workshops on the development of agency specific action plans utilizing *IT* in the achievement of mission critical programs shall be conducted. Likewise, to provide the participants with a first-hand update on the latest in the field of *IT*, products and solutions will be demonstrated and how these can be used to the agency's advantage.

Entry Qualifications:

Division Chief, Managers

EDS-Level 3

This third level of the EDS aims to provide the participants with a "hands-on" *IT* learning experience. Topical coverage shall be the same as with the other two (2) levels however, topics will be discussed in more detail with the end-view of providing the participants with

adequate working knowledge of *IT*. The seminar will be conducted for three whole-day sessions and activities/methodologies will vary from lecture-discussions, information technology updates through product/solution presentations, workshops on issues such as information sharing, databanking and the like in preparation for agency-specific IS planning, as well as presentation of "success stories" of ISP implementation of some government agencies.

Entry Qualifications:

Middle management such as supervisors, and IT Officers.

**INFORMATION SYSTEMS PLANNING
SEMINAR
(40 hours/5 days)**

The continuing strides being made on *IT* products, and the extension of the capabilities of *IT* in tandem with telecommunications has resulted in the expansion of the range and type of applications of *IT* in government information systems. Consideration for the efficient and effective use and management of *IT* resources in government necessitates the careful planning of information systems. The Information Systems Planning Seminar is designed for managers and other persons responsible in planning for information systems based on the organization's goals,

objectives and strategies. It deals with the requirements for an Information Systems Plan (ISP) and the steps in developing the IS Strategic Plan (ISSP). This will also assist participants in recognizing and appreciating their role in the development of the IS plans as well as in the realization of the organization's goals and objectives through the information system plan.

Course Contents:

- IS Planning Project Organization
- Assessment of the Agency's Organization Strategy
- Assessment of *IT* Options
- Formulation of IS Development Strategy
- IS Project Planning

Entry Qualifications:

IS planners, managers and decision makers concerned with planning and setting the directions for the use of information technology in their organizations.

B.S. Computer Science

A total of 182 units over a four-year program is required for the degree, broken down into:

Core Courses (125 units)

These are the courses that all students of the Ateneo, regardless of their concentration, have to complete. Included are courses in English, History, Pilipino, Theology, Philosophy and a number of other disciplines that provided for a well-rounded education and that sharpen critical thinking, communication skills and leadership.

Major Courses (58 units)

The required major courses were chosen after evaluating curriculum recommendations by the ACM (Association of Computing Machinery) and IEEE (Institute of Electrical and Electronics Engineering), consulting local academicians and computer experts and surveying curricula and admission requirements of a number of local and foreign schools prestigious in the field of computers. The major courses include 22 units of Mathematics, 10 units of Physics and 10 units of digital electronics and logic design and the following courses:

- Introduction to Computing I and II
- Data Structures and Algorithms
- Structure of Programming Languages
- Computer Architecture
- Theory of Automata and Formal Languages
- Computer Organization and Assembler Programming
- Operating Systems

Unlike the major courses which tend to be fundamental, the electives allow the student to apply the skills he has learned in various fields and situations. The electives are typically chosen from the course offerings of the Computer Science and Computer Engineering Programs, although courses in Mathematics, Management Engineering, Business and other disciplines may also be credited at the discretion of the Program Director. Some of the courses offered as electives by the CS Program include:

- Applied Algebra
- Mathematical Logic
- File Processing
- Numerical Analysis
- Statistical Computing

- Systems Analysis and Design
- Theory of Algorithms
- Combinatorics and Graph Theory
- Switching Theory and Boolean Algebra
- Systems Organization and Design
- Computer Simulation
- Computing with Symbolic Expressions
- Compilers
- Accounting Information Systems
- Management and Management Information Systems
- Selected Topics in Computer Science

A student may also opt to either complete an independent project within one semester or undergo a summer work practicum before his senior year to get three units of credit. The CS Program has secured a number of arrangements with local companies to expose students to actual conditions in the Information Technology industry through a Summer Practicum Program.

The Freshmen and Sophomore Computer Science students learn structured programming, data structures and the design and implementation of algorithms using Pascal, a language primarily designed for teaching methodical programming. Although Pascal serves as their primary programming language during these two years, the students are also introduced to assembly language, object-oriented programming and C.

Juniors study digital electronics and logic design further exploring C and assembly, as well as languages such as FORTRAN and LISP. The seniors apply what they have learned in the previous three years in elective courses, even as they complete their major courses by learning automata theory and the design and the organization of computer systems and systems software.

By the time they graduate, students of the Computer Science Program would have had considerable programming experience in Pascal, C and Assembly, would have been extensively exposed to MS-DOS and UNIX — the operating systems that have been the de-facto standards for stand-alone microcomputer and small and medium sized multi-user systems, respectively. Depending on the electives they choose, they would have also become familiar with systems analysis and design, graphics, COBOL, microprocessors, artificial intelligence, and other low and high level languages.

M.S. Computer Sciences

I. Required Courses (9 units)

CS 241 - Numerical Methods with Statistics	3 units
CS 250 - Computer Architecture with Data Communications	3 units
CS 290 - Methods of Research	3 units

II. Field of Concentration (15 units)

A. Artificial Intelligence

The student must take the following three courses:

CS 270 - Computing with Symbolic Expressions	3 units
CS 271 - Introduction to Artificial Intelligence	3 units
CS 272 - Expert Systems and Knowledge Engineering	3 units

The student must take at least two of the following:

CS 231 - Introduction to Software Engineering	3 units
CS 232 - Database Systems	3 units
CS 261 - Operating Systems	3 units
CS 265 - Advanced Systems Analysis and Design	3 units
CS 268 - Computer Simulation and Modelling	3 units
CS 295 - Seminar: Advanced Topics in Computer Science	3 units

B. Software Engineering

The student must take the following three courses:

CS 231 - Software Design and Development	3 units
CS 232 - Database Systems	3 units
CS 265 - Advanced Systems Analysis and Design	3 units

The student must take at least two of the following:

CS 261 - Operating Systems	3 units
CS 268 - Computer Simulation and Modelling	3 units
CS 270 - Computing with Symbolic Expressions	3 units
CS 271 - Introduction to Artificial Intelligence	3 units
CS 272 - Expert Systems and Knowledge Engineering	3 units
CS 295 - Seminar: Advanced Topics in Computer Science	3 units

The Program Director may substitute equivalent or more rigorous courses for those prescribed above.

III. Electives (6 units)

The electives are to be chosen, with the approval of the advisor from among the following:

CS 201 - Systems Analysis and Design I	3 units
CS 210 - Data Structures and Algorithms	3 units
CS 242 - Logic Design and Switching Theory	5 units
CS 251 - Theory of Automata and Formal Languages	3 units
CS 280 - Structure of Programming Languages	3 units

In addition to the above courses, electives may be designated by the Program Director from among the courses offered by the Mathematics, Physics, and/or other graduate departments related to computing.

IV. Comprehensive Examination

Upon completion of the course work, the student must take and pass a written comprehensive examination in computer science.

V. Thesis (6 units)

This requirement may be fulfilled by either of two options:

Option 1. The student will work on one major project in each of two successive semesters and will enroll in the following courses at the end of his formal course work:

CS 291 - Independent Project I	3 units
CS 291 - Independent Project II	3 units

Option 2. The student shall prepare a master's thesis in Computer Science or a closely related field and shall enroll at least twice under CS 300 (Thesis Writing - 3 units).

Either option will require the student to defend his work in an oral examination conducted by a faculty panel.

**INFORMATION SYSTEMS
ARE ONLY AS GOOD AS THE
PEOPLE WHO DEVELOP THEM.**

STRUCTURED SYSTEMS ANALYSIS AND DESIGN

A COMPREHENSIVE PROGRAM

A unique training program in one of the most vital aspects of I.T. Only from the leader. Almost two decades of experience and expertise in I.T. training has allowed us to design today's most comprehensive and quality training on information systems development.

Designed for I.T. professionals, user management and staff.

**Module I
THE BUSINESS SYSTEMS ENVIRONMENT**

**Module II
COMPUTERS, SYSTEMS AND NETWORKS**

**Module III
STRUCTURED SYSTEMS ANALYSIS WORKSHOP**

**Module IV
STRUCTURED SYSTEMS DESIGN WORKSHOP**

**Module V
DATA ANALYSIS AND MODELLING**

**Module VI
DOCUMENTATION STANDARD**

**Module VII
SYSTEMS SECURITY AND CONTROL**

**Module VIII
HARDWARE/SOFTWARE EVALUATION**

**Module IX
MANAGING SYSTEMS DEVELOPMENT PROJECTS**

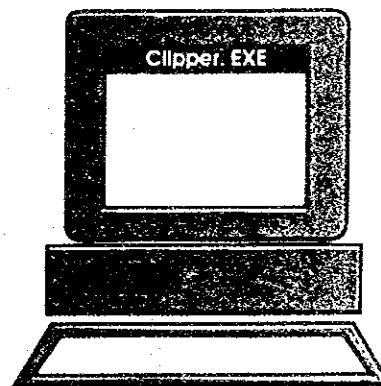


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COMPUTER ASSOCIATES

Authorized Training Center

UNIX COURSES

GETTING STARTED WITH UNIX

A one-day introductory seminar for managers as well as users. Learn the basics of Unix, its relation to open systems, its similarities and differences with DOS.

8:00 - 5:30 pm	April 6	Makati	8 hrs	P1495
8:00 - 5:30 pm	May 4	Makati		
8:00 - 5:30 pm	June 1	Makati		
8:00 - 5:30 pm	April 22	Greenhills		

UNIX OS WITH SHELL PROGRAMMING

This course provides a more comprehensive knowledge of the Unix operating system and is intended for beginners as well as intermediate users. Know the different utility programs that make your work a lot easier. Learn how to program the Unix shell and create your own Unix programs.

8:00 - 12:00 nn	April 11-22	Makati	40 hrs	P3950
8:00 - 12:00 nn	May 9-20	Makati		
8:00 - 12:00 nn	June 6-17	Makati		
1:00 - 5:00 pm	April 25-May 6	Greenhills		

UNIX SYSTEM ADMINISTRATION

Every Unix system needs somebody to take care of it. This course will teach you how to install Unix terminals, printers, and other hardware and software, support user requests, perform crucial backups and other necessary tasks to keep the system up and running.

8:00 - 12:00 nn	April 25-29	Makati	20 hrs	P2950
8:00 - 12:00 nn	May 23-27	Makati		
8:00 - 12:00 nn	June 20-24	Makati		
1:00 - 5:00 pm	May 16-20	Greenhills		

C LANGUAGE UNDER DOS/UNIX

Learn how to program in C using both operating systems. This course gives you a solid background of the language that is essential if you are to become a true systems programmer. Important concepts like pointers, data structure, and file handling are discussed to enable you to become a proficient C programmer either in DOS or Unix.

1:30 - 5:30 pm	April 11-29	Makati	60 hrs	P4950
1:30 - 5:30 pm	May 9-27	Makati		
1:30 - 5:30 pm	June 6-24	Makati		
1:00 - 5:00 pm	June 20-July 8	Greenhills		



UNIX COURSES

ADVANCED C UNDER UNIX

This course is intended for C programmers who wish to explore the capabilities of C under the UNIX operating system. The course takes up the differences between C under DOS and UNIX. It includes discussions on creating UNIX-like functions. It also includes a detailed discussion on the contents and usage of the screen graphics library of C and on the development of a multi-user database program.

1:30 - 5:30 pm	May 2-6	Makati	20 hrs	P2950
1:30 - 5:30 pm	June 27-July 1	Makati		

DEVELOPING APPLICATIONS USING INFORMIX-SQL

In this course, you will learn how to use the Informix-SQL menu system. You will also design screen forms, set up a menu interface for users, and write formatted reports.

8:00 - 5:30 pm	April 18-20	Makati	24 hrs	P6000
8:00 - 12:00 nn	May 6-13	Makati		
8:00 - 12:00 nn	June 3-10	Makati		

DEVELOPING APPLICATIONS USING INFORMIX-4GL

This course introduces you to the powerful features of Informix-4GL. You will learn to build applications that feature windowed screens, complex reports, and easy-to-use menus — all with significantly less code than conventional programming languages would require.

8:00 - 5:30 pm	April 25-29	Makati	40 hrs	P10,000
8:00 - 12:00 nn	May 16-27	Makati		
8:00 - 12:00 nn	June 13-24	Makati		

NETWORKING AND DATA COMMUNICATIONS

INTRODUCTION TO LAN

This is a one-day seminar for managers, users and I.T. professionals. They will understand LAN concepts and terminologies, appreciate the benefits that LAN technology offers to business organizations, and get useful tips in the evaluation of LAN products.

8:00 - 5:30 pm	April 6	Makati	8 hrs	P1500
8:00 - 5:30 pm	May 4	Greenhills		
8:00 - 5:30 pm	June 1	Makati		

LAN DESIGN

This course explains the hardware, software and cabling elements in the setting up of a LAN and the structures in the connection of computers for data and resource sharing. This course is intended for managers, users and I.T. professionals who are seriously considering the viability of implementing a LAN in their organizations.

8:00 - 12:00 nn	April 11-15	Makati	20hrs	P3500
1:00 - 5:00 pm	May 9-13	Greenhills		
8:00 - 12:00 nn	June 6-10	Makati		

LAN ADMINISTRATION

This course is intended for managers, users and I.T. professionals who are charged and who may be charged with the responsibility for a LAN installation. It explains the tasks required to keep the LAN running efficiently and effectively, like the planning and setting up of a LAN, and the planning and implementation of LAN security.

8:00 - 12:00 nn	April 18-22	Makati	20 hrs	P3500
1:00 - 5:00 pm	May 16-20	Greenhills		
8:00 - 12:00 nn	June 20-24	Makati		

DATA COMMUNICATIONS AND NETWORKING

This course is intended for managers, users and I.T. professionals. It provides comprehensive fundamental knowledge of data communications and networking concepts and their applications in a business environment. It includes topics covering the connectivity of PCs to mainframes or minicomputers.

9:00 - 12:00 nn	April 25-29	Makati	15 hrs	P2750
2:00 - 5:00 pm	May 23-27	Greenhills		
9:00 - 12:00 nn	June 27-July 1	Makati		

QUESTIONNAIRE
FOR THE
PROPOSED TECHNICAL
COOPERATION PROJECT

ON

THE
SOFTWARE DEVELOPMENT INSTITUTE

IN

THE REPUBLIC OF
THE PHILIPPINES

APRIL, 1994

Japan International Cooperation Agency

Subject : Questionnaire for the Proposed Technical Cooperation
Project on a Software Development Institute in the
Republic of the Philippines

To : the Authorities concerned of the Government of the
Republic of the Philippines

Date : April ,1994

A. Background of the establishment of a Software Development
Institute (herein-after referred to as "SDI") in Philippines

A-1. Government policy for computerization in the Philippines
Government assistance to the private and public sectors
related to computer industries

A-2. Present situation and future prospects on computer
utilization in the Philippines

(1) Number of computers installed by type, capacity, usage, etc.

(2) Market share of computer makers

(3) Number of computers imported during recent several years

A-3. Present situation and future prospects on computer related
man-power

Operators (Number, qualification, supply and demand)

Programmers (Number, qualification, supply and demand)

System engineers (Number, qualification, supply and demand)

System Analysts (Number, qualification, supply and demand)

Technical Managers (Number, qualification, supply and demand)

A-4. Present situation of education and training activities and facilities for computer technology development

- (1) Private training activities ,facilities and purpose at enterprises,vocational schools, etc.
- (2) Education activities and purpose at Universities and Colleges
- (3) Training activities and purpose at National Computer Institute
- (4) Qualifications of those students
- (5) Employment situation of those students who complete their training as shown above

B. Conception on Software Development Institute(hereinafter referred to as "SDI")

B-1. Establishment of SDI

- (1) Priority and urgency of SDI in National Development Plan
- (2) Relations with other organizations concerned (for example, Information Technology Coordinating Council or private sector)

B-2. Organization of SDI

- (1) Organization Chart in the NCC

B-3. Building condition of SDI

- (1) Proposed site (Map)
- (2) Schedule of the building preparation

C. Conception on the Proposed project by the Government of the Philippines (When the Government of Japan judge the Proposed Project whether to take it up as Project-type Technical Cooperation, we should get more detailed information about following matters)

C-1. Program for training courses

- (1) Frequency and time period
- (2) Number of trainees
- (3) Sorts and qualification of trainee
- (4) Method of recruitment for trainees
- (5) Collection of training fee
- (6) Kind of certificate to be given to the training upon completing the training courses
- (7) Enterprises which dispatch trainees to SDI
- (8) Enterprises which adopt those graduates (demand)
- (9) With regard to the proposed training course
 - 1) Difference between "Strategic Information Systems Planning Course" and "System Integration Course"
 - 2) Necessity of distinction between "Structured Systems Analysis and Design Course" and "Object Based Systems Analysis and Design Course"
 - 3) Priority of the proposed training course

C-2. Duration of the Project

C-3. Request from the Philippines side for the Project

- (1) Dispatch of the Japanese experts
(Specific fields with terms, number, role, qualification, etc.)
- (2) Counterpart training in Japan
(Specific fields with terms, number, qualifications, etc.)

- (3) Provision of machinery, equipment and materials
(Specification , quantity and priority)

C-4. Management of the Project

- (1) Relation between SDI and National Computer Institute

C-5. Undertaking of Philippines side

In case the Government of Japan decides to conduct the Project as the Project-Type Technical Cooperation Project, the Government of Philippines is expected to undertake the following matters.

If the Philippine side has some comments or questions on those matters, please answer.

- (1) Preparation of building and facilities for the Project
- (2) Securing of counterpart personnel for the Project
- (3) Securing of operational cost for the Project
- (4) Preparation of machinery, equipment and materials necessary for the Project except for those items provided by the Japanese side

D. Others

D-1. Linkage with Foreign Institutions/countries

(For example, USAID, US Embassy ,French Consultants,Australian, Canadian ,Mongolian Governments)

D-2. Other useful information for the Project

CHECK LIST-ELECTRICAL SYSTEM

- I. Infrastructure
- II. Existing Facility of NCC
- III. Operation / Maintenance

[LEGEND]

NCC: National Computer Center

MARCH, 1994

JAPAN INTERNATIONAL COOPERATION AGENCY

CHECK LIST-ELECTRICAL SYSTEM

I . INFRASTRUCTURE

Question	Answer
1 . Electric Power Supply	
1) Name of electric power company	_____
2) Name, location and capacity of substation for the project site	_____
3) Construction cost and scope of works for the project site	_____
4) The breaking (Short Circuit Current) capacity at the incoming point	_____ KA
2 . Electric Power Stability for the project site	
1) Voltage fluctuation	_____ KV \pm _____ %
2) Frequency fluctuation	_____ Hz \pm _____ %
3) Frequency and duration of power failure	_____ times/month _____ hours (minutes)
3 . U . P . S	_____ KVA
4 . Voltage Stabilizer	_____

II. EXISTING FACILITY OF NCC

Question	Answer
1. Power System	
1) Contract power capacity	_____ KW
2) Transformer voltage, capacity and number	P: _____ S: _____ _____ KVA × _____ set(s)
3) Location and sizes of incoming line	_____
2. Emergency Generator System	
1) Generator	
- Type	a) Diesel b) Other: _____
- Capacity, set	_____ KVA × _____ set(s)
- Phase, Wire and Voltage	_____ Phase _____ W _____ V
- Fuel type	a) Heavy oil b) Light oil
- Cooling system	a) Radiator cooling b) Water cooling
- Fuel oil tank capacity	_____ l
- Operation time	_____ hr
- Supply load list and capacity	_____

III. OPERATION/MAINTENANCE

Question	Answer
1. Electric Power	
1. Electric Power	
1) Energy charge	_____ Pesos/KW. hr
2) Demand charge	_____ Pesos/KW. month
3) Tax	_____
4) Please prepare the tariff of power supply company	
2. Generator System	
1) Fuel Oil	_____ Pesos/ℓ
3. Manpower for maintenance	
1) No. of staffs with shift system	_____ persons _____ hours _____ group
2) Necessary license	_____
3) Wage for maintenance staff for work	_____ Pesos/month
4) Repair of machine	
a) Items at work shop in NCC	_____
b) Items to be ordered to service agent	_____

Answers to Questionnaire for the Proposed Technical Cooperation Project on a Software Development Institute in the Republic of the Philippines

A. BACKGROUND OF THE ESTABLISHMENT OF A SOFTWARE DEVELOPMENT INSTITUTE (SDI) IN THE PHILIPPINES

**A-1. Government policy for computerization in the Philippines
Government assistance to the private and public sectors related to computer industries**

The Ramos administration ushered in a new national development plan called the **Philippines 2000**, which aims to make the Philippines a newly industrializing country (NIC) by the year 2000. A key strategy for the realization of the vision of Philippines 2000 is the maximum use of information. It is against this backdrop that a revitalized National Information Technology Plan (NITP) evolved and has become the **NITP 2000**.

The NITP 2000 presents a framework by which government and the private sector will work together to optimize the use of information technology (IT) in the country. The goal is to propagate nationwide computing in order to facilitate the application of IT in all sectors of Philippine society. IT must be made an integral part of the everyday life of every Filipino. IT must be extensively used in the technology-based industries, government offices where citizens transact business, educational institutions, commercial establishments, and even in the homes.

To achieve the goal of the NITP 2000, the following overall strategies will be pursued:

- **IT Use:** Empower the people through widespread and intensive use of IT in all sectors of society to enable the coordinated use of IT
- **IT Production:** Promote the accessibility of IT products and services
- For more information, please refer to the detailed NITP 2000.

A-2. Present situation and future prospects on computer utilization in the Philippines

(1) Number of computers installed by type, capacity, usage, etc.

It was estimated in 1992 that among the top 1,500 corporations in the country, 95% of the listed companies already have installed IT equipment. Majority of the companies use microcomputers only, although a significant number also use mainframes and minis. Independent estimates place the number of microcomputers in the country to be in excess of

250,000 as of 1992, with the government accounting for at least 10% of the total.

Financial institutions are the biggest users of mainframes. Applications include comprehensive control systems connected to manned teller operations, customer account management, ATM networks, and other processing requirements.

Minis are most popular in manufacturing companies where applications include sales and order monitoring, payroll processing, inventory control, and CAD/CAM for the more sophisticated companies in the construction, engineering, and semi-conductor companies.

For the same year 1992, the National Computer Center reported a total of 20,631 computer systems installed in 861 government offices. For further details, please refer to the 1992 Report on Information Technology Resources in Government.

The number of computer installations in the country is estimated to grow by some 15% - 20% per year, with microcomputers continuing to lead the way. The growth in the number of minicomputers and workstations is expected to increase, with the trend towards distributed processing and network integration.

A-3. Present situation and future prospects on computer-related manpower

The Philippine Software Association estimated in 1992 that there are only 7,200 programmers and systems analysts in the Philippines, of which 5,000 are in end-user firms, 400 are in software development companies and 1,800 are in the academe. These numbers have diminished drastically since, in view of the heavy exodus of technical people for better paying jobs abroad. There is now a dearth of properly trained personnel in spite of the proliferation of computer schools in the country.

In 1992, the National Computer Center reported a total of 2,124 IT personnel in the government. For further details, please refer to the 1992 Report on Information Technology Resources in Government.

A-4. Present situation of education and training activities and facilities for computer technology development.

- Education and training activities are provided by educational institutions, proprietary training centers, and computer vendors/suppliers.
- The number of graduates coming from different IT degree programs have been increasing in the recent years, however, most companies

prefer graduates coming out from selected schools, indicating lack of confidence on the quality levels of educational institutions in general.

- The problems faced by educational institutions (colleges and universities) in conducting its IT programs are: lack of continuous development program for faculty, lack of actual business experience, minimal access to mainframes and related operating systems, no uniform academic standards.
- The problems faced by proprietary training centers (non-degree courses) are: limited course offerings, profit motivation which sacrifices quality, the high cost of quality courses, and lack of continuous development program for faculty.

(1) Private training activities, facilities, and purpose at enterprises, vocational school, etc.

In the Philippines, schools offering short-term, non-degree courses are classified as technical-vocational (tehvoc) schools. In this proposal, we call them "proprietary training centers". These are privately owned and the major centers operate on a "franchise" mode, which allows them to distribute their training courses to different areas in the country.

Most of the courses offered are PC-based (software packages, programming languages etc.). Enrolees also include PC-users.

(2) Education activities and purpose at Universities and Colleges

Universities and Colleges (whether private or government) offer bachelor's degree program in IT related fields. These are normally courses lasting for 4 years. Some schools offer "Associate" courses, lasting for 2 years. As of 1990, there are about 1,500 IT graduates yearly from Metro Manila alone. This number could easily have doubled at this time.

(3) Training activities and purpose at National Computer Institute

NCI caters mainly to IT professionals working in government agencies. It offers various IT courses, and have also certification programs for programmers and analysts.

(4) Qualification of those students

Students entering basic short term courses offered by proprietary training institutes need at least a high school diploma. Entrance exams are not normally given. Colleges and Universities give entrance exams. Some schools maintain quotas, as such they accept only a certain percentage of the

candidates. The National Computer Institute gives qualifying tests, generally requires college diploma, and to a certain extent some requisite IT-related job experience.

(5) Employment situation of those students who complete their training as shown

Currently, recruiting organizations prefer graduates from Metro Manila schools, particularly those from the top three universities (UP, Ateneo, La Salle). This indicates the lack of confidence on the quality levels of educational institutions, in general.

B. CONCEPTION ON SOFTWARE DEVELOPMENT INSTITUTE (SDI)

B-1. Establishment of SDI

(1) Priority and urgency of SDI in National Development Plan

The 5-year Medium Term Philippine Development Plan identified technology upgrading and manpower development as critical activities for the growth of the Philippine economy. Meanwhile, the Medium-Term Philippine Export Development Plan recognized the potential of the software industry when it included computer software and professional services in the list of 14 export winners or high-growth products. Thus, the proposed SDI is supportive of these two development plans because it will address mainly the human resources development needs of the software industry. Moreover, SDI aims to contribute to the attainment of the vision of Philippines 2000 by creating a critical mass of IT professionals and trainers that will support the drive towards greater efficiency and productivity of the country's different industries.

(2) Relations with other organizations concerned (e.g., ITCC and the private sector)

With the Private Sector:

SDI is a joint undertaking among three sectors: the government, the business or the private sector, and the academe. The private sector will be represented in SDI's Board of Trustees, by having expanded to include representatives from IT Training Centers.

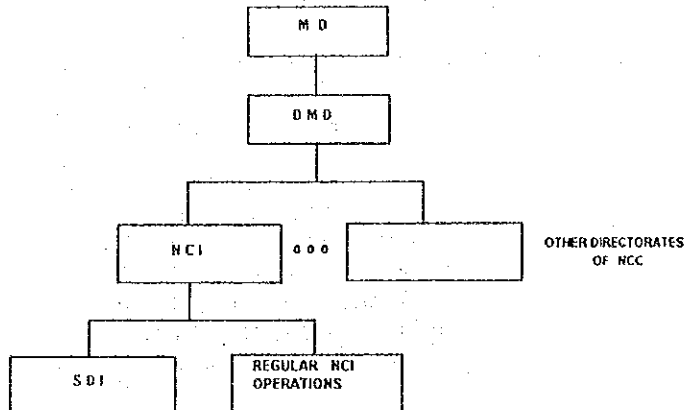
Private sector involvement will ensure that the programs of SDI are attuned to the needs of the industry. The academe will ensure that SDI programs are coordinated with the offerings of the various training centers.

With the NITB (formerly ITCC):

SDI is one of the major programs of the NITP 2000. NITB will be the governing and policy body of all IT-related programs including NITP2000, and as such, NITB shall constitute/name members of the SDI Board of Trustees with the NCC Managing Director as Chairman.

B.2 Organization of SDI
(Please refer to page 34 of proposal for the SDI organization chart)

(1) Organization Chart in the NCC



B.3 Building Condition of SDI

- (1) Proposed site (Map)
- (2) Schedule of building preparation
(Please see attached schedule)

C. CONCEPTION ON THE PROPOSED PROJECT BY THE GOVERNMENT OF THE PHILIPPINES

C.1 Program for training courses

(1) Frequency and time period

For the time period of each course, please refer to pages 46-53 of the proposal. Most of the courses will be offered twice a year.

(2) Number of Trainees

Laboratory Capacity	-	60 (4 x 15 students)
Classroom Capacity	-	120 (4 x 30 students)

Number of offerings/year - 18 (average)
Estimated no. of trainees - 1080 per year (maximum)

(3) Sorts and Qualification of Trainees

Generally, trainees should have basic IT training and work experience.

(4) Method of Recruitment of Trainees

- Sponsored/endorsed by private organizations, government, schools
- Walk-in

(Note: Qualifying tests, interviews will be given to applicants.)

(5) Collection of Training Fees

(6) Kind of Certificate to be given to the trainees upon completing the training course.

SDI Certificates of Completion shall be given to all successful trainees.

(7) Enterprises which dispatch trainees to SDI

1. Gov't agencies (User Organizations)
2. Business Sector
 - Software Houses
 - User Organizations
 - IT Industry
 - Consultancy Outfits
3. Schools (gov't and private colleges, universities and IT training centers)
4. Foreign Employers

(8) Enterprises which adopt those graduates (demand)

1. Gov't agencies (user organizations)
2. Business sector
 - Software Houses
 - User Organizations
 - IT Industry
 - Consultancy Outfits
3. Schools (gov't and private colleges, universities and IT training centers).
4. Foreign Employers

(9) With regard to the proposed training course

(1) Difference between "Strategic Information Systems Planning Course" and "System Integration Course"

The "Strategic Information Systems Planning Course" will concentrate on the strategic approach to developing an Information Systems Plan. On the other hand, the "Systems Integration Course" will teach the methodology in proposing for and managing large scale systems integration projects. For the major topics of each course, please refer to pages 48 and 50 of the proposal.

(2) **Necessity of distinction between "Structured Systems Analysis and Design Course" and "Object Based Systems Analysis and Design Course"**

It is necessary to distinguish between the structured approach and the object-oriented approach to analyzing and designing information systems because these are two different methodologies. The structured approach is widely used in the Philippines, while the object-oriented approach is a relatively new methodology which is becoming popular in the country.

C-2. Duration of Project

Continuing, with first 5-years financially and technically supported by JICA

C-3. Request from the Philippines side for the Project

(1) **Dispatch of the Japanese experts**

SDI will require two types of technical support:

- Curriculum Specialist - must have the expertise to do the following:
 - assess advanced technical courses to assist SDI in selecting the courseware that will best address the skills required by SDI
 - design appropriate examinations/tests for the different courses
 - design and develop case studies and projects
- Technical Specialists - are required on specific areas such as the following:
 - open systems
 - software engineering - to include advanced programming techniques and software development technologies
 - data communications and database design/management

(2) **Counterpart training in Japan**

SDI will require counterpart training in Japan in the following areas:

- Curriculum development for advanced IT courses
- Software engineering
- Database management
- Communications/networking
- Computer-Aided Instruction (use of multi-media, etc.)
- others (Training Program Management, IS Project Management, IS Management, Strategic Planning, etc.)

**(3) Provision of machinery, equipment and materials
(Specification, quantity and priority)**

Refer to the Hardware and Software schedule in the proposal.

C-4. Management of the Project

(1) Relation between SDI and National Computer Institute (NCI)

The SDI will be managed by a Board of Trustees whose main function is to formulate policies and directions, as well as operating guidelines. The Board of Trustees shall be headed by the Managing Director of the National Computer Center (NCC).

Since NCI has the expertise in NCC of managing and operating a training institute, most of the staff of NCI shall be tasked to assist in the operations of SDI in its initial years of implementation. Such an arrangement will result in reduced personnel costs for SDI since the NCI staff to be seconded to SDI will just be receiving allowances from the latter.

C-5. Undertaking of Philippines side

The Government of the Philippines is willing to undertake the following matters for the Project:

- Preparation of building and facilities
- Securing of counterpart personnel
- Securing of operational cost
- Preparation of machinery, equipment and materials necessary for the Project, except for those items provided by the Japanese side

D. OTHERS

D-1. Linkage with Foreign Institutions

As part of its technology transfer program, SDI shall establish linkages with foreign institutions for the sourcing of new technologies from abroad and the adaptation of these technologies to local conditions. These will, in turn, be disseminated to SDI's participating training centers and user organizations.

Project : NATIONAL COMPUTER CENTER BUILDING
C.P. Garcia Ave, U.P. Diliman, Q.C.

I. ELECTRICAL POWER SUPPLY

A. Name of Elect. Co. : MERALCO

B. Sub-Station :

1. Location ----> U.P. DILIMAN, Q.C. (NCC Vault Room)
2. Capacity ----> 3-333 KVA (Pri. 34.5KVA, Sec. 240V/3P/3-wire)

C. Construction Cost & Scope of Works : SEE ATTACHED

D. Breaking (short circuit current) Capacity at the
incoming point : MDP - 3000AT/3P/CB/230V
MIN. INTERRUPTING CAP. = 57KA

II. ELECT. POWER STABILIZATION FOR PROJECT SITE

A. Voltage Fluctuation (KV) --> 10% (plus or minus)


B. Frequency Fluctuation (Hz) --> 59.6% to 60.6%

C. Duration of Power Failure --> VERIFY FR. NPC/MERALCO

* III. UPS- (owner supplied) NOT SPECIFIED IN PLANS

IV. VOLTAGE STABILIZER (AVR) --> 3-50KVA/3P

Prepared by :


ALLAN S. CABRERA
Chief, EMD, CPDMO

CAMPUS PLANNING DEVELOPMENT & MAINTENANCE OFFICE
U.P., Diliman, Quezon City

Project : NATIONAL COMPUTER CENTER BUILDING
C.P. Garcia Ave., U.P. Diliman, Q.C.

Subject : COST ESTIMATE (TO COMPLETE)

Date : 28 MAR 94

ITEMS OF WORK	COST TO COMPLETE	INCLUDED IN PHASE-III	INCLUDED IN PHASE-IV
I. STRUCTURAL WORKS			
A. Third Flr. to Roof.	4,113,672.72	4,113,672.72	---
B. Wall Ftg. & Slab-on fill at Lowest Flr.	882,464.44	882,464.44	---
C. Wall Ftg. & Slab-on fill at Ground Flr.	793,852.95	793,852.95	---
D. Retaining Walls ...	1,799,239.84	1,799,239.84	---
E. Conference Hall ...	1,927,465.37	1,927,465.37	---
F. Lintels, Stiffeners & Counters	400,965.31	400,965.31	---
G. Earthworks	681,000.00	681,000.00	---
II. ROOFING WORKS	1,637,411.69	1,637,411.69	---
III. WATERPROOFING WORKS			
A. Roof Decks, Gutters	770,000.00	770,000.00	---
B. Third Floor	256,483.00	256,483.00	---
IV. ARCHITECTURAL FINISHES			
A. Exterior	11,373,856.59	11,373,856.59	---
B. Interior :			
1. Lowest Floor	3,736,582.13	3,736,582.13	---
2. Ground Floor	5,106,491.87	5,106,491.87	---
3. Second Floor	3,294,154.72	3,294,154.72	---
4. Third Floor	6,221,621.93	3,721,621.93	2,500,000.00
5. Conference Hall .	4,500,000.00	---	4,500,000.00
V. SANITARY WORKS			
A. Exterior:			
1. Main Water Line .	328,005.04	328,005.04	---
2. Drainage System .	702,128.98	702,128.98	---
B. Interior:			
1. Lowest Floor	305,187.63	305,187.63	---
2. Ground Floor	307,902.26	307,902.26	---
3. Second Floor	221,268.07	221,268.07	---
4. Third Floor	451,537.54	451,537.54	---
C. Aux. Water Supply .	588,828.39	588,828.39	---
VI. ELECTRICAL WORKS			
A. Feeders	1,868,193.23	1,868,193.23	---
B. Interior Lighting & Power System			
1. Lowest Floor	1,142,590.94	1,142,590.94	---
2. Ground Floor	809,723.48	809,723.48	---

CAMPUS PLANNING DEVELOPMENT & MAINTENANCE OFFICE
U.P., Diliman, Quezon City

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C.P. Garcia Ave; U.P. Diliman, Q.C.

Subject : COST ESTIMATE (TO COMPLETE)

Date : 28 MAR 94

ITEMS OF WORK	COST TO COMPLETE	INCLUDED IN PHASE-III	INCLUDED IN PHASE-IV
3. Second Floor	664,361.37	664,361.37	---
4. Third Floor	965,648.07	965,648.07	---
C. Panelboards	1,892,453.05	1,892,453.05	---
D. Pub. Adr. & Tel. Sys	2,841,093.02	341,093.02	2,500,000.00
E. Security Alarm Sys.	371,400.00	---	371,400.00
F. Fire Alarm System	1,029,912.20	28,752.20	992,160.00
G. Perimeter Lighting	118,152.91	---	118,152.91
H. Emerg. Power Supply	3,000,000.00	---	3,000,000.00
VII. SPRINKLER SYSTEM			
A. Interior Works:			
1. Lowest Floor	1,500,000.00	---	1,500,000.00
2. Ground Floor	2,000,000.00	---	2,000,000.00
3. Second Floor	2,000,000.00	---	2,000,000.00
4. Third Floor	1,500,000.00	---	1,500,000.00
D. Pumps & Accessories	897,510.00	---	897,510.00
VIII. MECHANICAL WORKS			
A. Lowest Floor	801,704.40	---	801,704.40
B. Ground Floor :			
1. Package type ACU's	1,625,281.20	---	1,625,281.20
2. Centralized unit for Auditorium	1,792,792.00	---	1,792,792.00
3. Comp. Precision @ Main Comp. Room	3,871,021.77	---	3,871,021.77
4. Vent/Exhaust Fans	106,082.00	---	106,082.00
C. Second Floor	2,801,500.00	---	2,801,500.00
D. Third Floor	2,601,163.20	---	2,601,163.20
IX. SPECIALTY WORKS (at Main Computer Room)			
A. Halon Fire Prot. Sys	1,865,672.29	---	1,865,672.29
B. Raised Flooring	2,471,400.00	---	2,471,400.00
C. UPS	3,500,000.00	---	3,500,000.00
D. Power Dist. System	500,000.00	---	500,000.00
E. Partitions	350,000.00	---	350,000.00
X. SITE DEVELOPMENT & FENCING			
	7,500,000.00	---	7,500,000.00
XI. FURNISHINGS			
	15,000,000.00	---	15,000,000.00
XII. SEATS & EQUIPT. FOR Main Conf. Hall			

CAMPUS PLANNING DEVELOPMENT & MAINTENANCE OFFICE
 U.P., Diliman, Quezon City

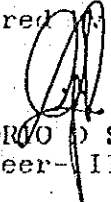
Project : NATIONAL COMPUTER CENTER BUILDING
 C.P. Garcia Ave, U.P. Diliman, Q.C.

Subject : COST ESTIMATE (TO COMPLETE)


Date : 28 MAR 94

ITEMS OF WORK	COST TO COMPLETE	INCLUDED IN PHASE-III	INCLUDED IN PHASE-IV
Audio/Visual Room, Seminar Room and Conference Room	5,000,000.00	---	5,000,000.00
TOTAL DIRECT COST	P122,778,775.60	P 51,112,935.83	P 71,665,839.77
ADD: INDIRECT COST	24,555,755.12	10,222,587.17	14,333,167.95
SUB-TOTALS	P147,334,530.72	P 61,335,523.00	P 85,999,007.72
ADD: MISCELLANEOUS			
A. Meralco Fee	2,000,000.00	2,000,000.00	---
B. Misc Fee	300,000.00	---	200,000.00
C. PLUT Fee	100,000.00	---	100,000.00
D. Architect/Admin. Fee	3,000,000.00	2,000,000.00	1,000,000.00
GRAND TOTALS	P152,634,530.72	P 65,335,523.00	P 87,299,007.72


Prepared by :


 GREGORIO P SIRILAN
 Engineer - II

Checked by :


 FRANCIS A FLORAD
 Chief, CIS, DSD

Recommending Approval :


 ANTONIO P CRUZ
 Director, CPCMO

Approved :

FERMIN P JAVIER
 Managing Director
 National Computer Center

Received by:
 Montecastro
 3-28-94

Question	Answer
----------	--------

1. Power System

1) Contract power capacity _____ KW

2) Transformer voltage, capacity and number Voltage P: 3 POLE S: 220 VOLTS

<u>333</u>	KVAx	<u>3</u>	set(s)
<u>167</u>	KVAx	<u>3</u>	sets
<u>25</u>	KVAx	<u>3</u>	sets

3) Location and sizes of incoming line
27 Lines 750 MCM

2. Emergency Generator System

1) Generator

- Type Portable Gen.set
a) Diesel
b) Other: Gasoline

- Capacity, set 5 KVAx 2 set(s)

- Phase, Wire and Voltage Single Phase 2 W 220 V

- Fuel type Gasoline
a) Heavy oil
b) Light oil

- Cooling system Air-Type
a) Radiator cooling
b) Water cooling

- Fuel oil tank capacity 5 Liters e

- Operation time 4 hr

- Supply load list and capacity _____

Question	Answer
----------	--------

1. Electric Power

1. Electric Power

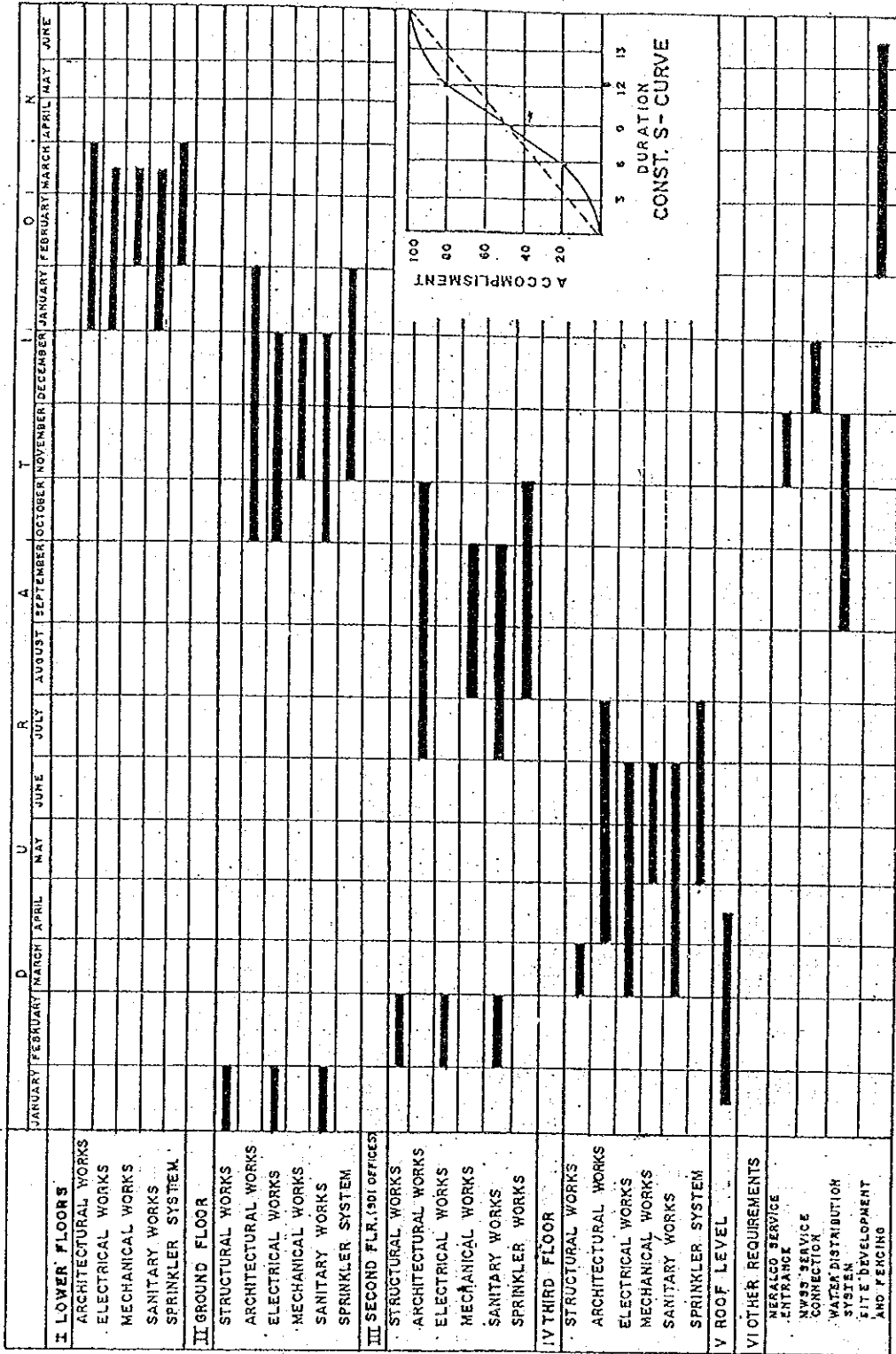
- 1) Energy charge _____ Pesos/KW.hr
- 2) Demand charge _____ Pesos/KW.month
- 3) Tax _____
- 4) Please prepare the tariff of power supply company

2. Generator System 2 set 5KVA Generator

- 1) Fuel Oil 40 Liters x P10 = P400 for 2 sets/5 hr use _____ Pesos/a day/5 hr

3. Manpower for maintenance

- 1) No. of staffs with shift system _____ 6 persons _____ 8 hours
_____ 1 group
- 2) Necessary license _____ Master Electrician
- 3) Wage for maintenance staff for work P3,420.00 (ave. wage) _____ Pesos/month
- 4) Repair of machine
 - Centralized Air-con
 - 1 set clamp meter
 - 1 set multi-tester
 - 1 set adjustable wrench
 - 1 set socket wrench
- a) Items at work shop in NCC _____
 - 3 set pliers
 - 3 set screw driver
- b) Items to be ordered to service agent _____
 - 1 set megger
 - 1 set digital multi-tester



CONSTRUCTION SCHEDULE

PREPARED BY: 	RECOMMENDED BY: 	APPROVED: 	PROJECT: "COMPLETION OF NATIONAL COMPUTER CENTER"
DIRECTOR, CPDNO ANTONIO F. CRUZ		MANAGER, DIRECTOR, NCC FERNANDO JAVIER	
SHERIFF, DILIMAN JONAS		OILMAN GILMAN	
SHEET NO. 1		LOCATION: GUEZON CITY	
SHEET CONTENTS:		CONSTRUCTION SCHEDULE & S-CURVE	