

# Stepping Into the World of Computers



## AUTOMATING THE SURVEYING OFFICE

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**H**AVE COMPUTER myths kept you from automating your office? If your answer is yes, you're not alone. They have stopped and discouraged many others too.

As a computer consultant to the surveying and engineering professions, let me dispel some of your fears and at the same time guide you in effective office automation.

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**Myth #1:** One computer can be used for word processing, time and billing, accounting, COGO and CAD, since these tasks won't tie the computer up all day.

Sharing one computer is possible but usually leads to staff frustration and decreased productivity. It is wiser to purchase one computer for COGO and CAD and a less expensive unit for office work. This will avoid overlapping of tasks. If a bill and a map need to be printed at the same time, there will be no need for anyone to wait.

**Myth #2:** I cannot afford to buy another computer that is dedicated to office tasks.

Putting off the purchase of a computer for financial reasons is not a valid excuse. A typical surveying office can pay off its investment of an office computer and software in about six to twelve months, just from the savings in employee time and increased office productivity. Moreover, you can save up to 40 percent off list prices if you shop carefully.

The biggest time saving areas are word processing tasks and time and billing tasks. The preparation of added descriptions, proposals and contracts are ideal for word processors. Revisions are made in minutes and the need for re-typing is eliminated. A word processor cuts the typing time almost in half.

Keeping track of employee time cards for job costing and billing is a very tedious and time consuming job when done manually. Job costing reports are often disregarded due to the time involved in generating them, even though they are a very important analysis for labour intensive professions such as surveying.

The right software can save two to four office hours a day compared to a manual time and billing system. Using an employee cost factor of ten dollars per hour, this is a monthly savings of \$400-\$800.

Financial considerations are important but the right software makes time management easier and improves employee attitudes.

**Myth #3:** It is easier and cheaper to write your own office software when you cannot find a software package that does all the things the way you do them manually.

The surveying profession has unique demands for time and billing, scheduling and accounting software. Finding the right software is not an easy task but it does exist. Some commercial packages allow for custom changes, so look into these options first. Writing your own software, although it sounds like the perfect answer, typically will cost you five to ten times more than an existing commercial software package and could take years to perfect and de-bug.

If you must have a custom software package, hire a professional programmer but be careful whom you select. Make sure you have a written contract stating the hourly rate of programming services and the scope of the project. This contract should be very detailed, listing all your expectations. Hiring a professional programmer is expensive, hourly rates range from \$50-\$100 per hour. Before signing any contract, talk to some of the consultant's customers. Ask them about service, updates and the usefulness of the custom software.

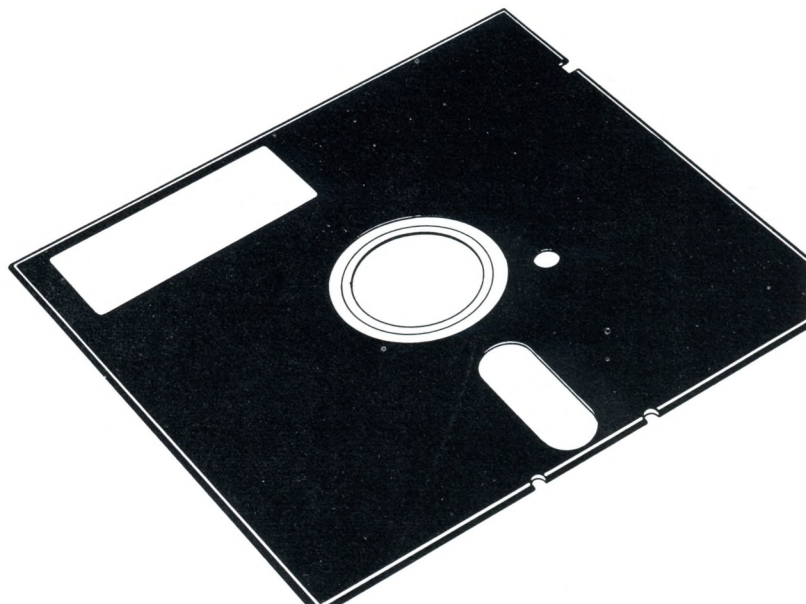
Whether you purchase a custom program or write software from scratch, you will experience a loss of time and data and employee frustration. Hopefully, it will be worth the headaches.

**Myth #4:** My office staff is not computer literate. They will not be able to easily learn how to use word processing, accounting or time and billing software.

The key to successful office automation is obtaining the right software and training. There are hundreds of word processing software packages on the market. Some are designed for offices with complex needs, others for offices with simple needs. Purchasing the wrong package will discourage your staff. The best way to select good software is to read software reviews and to talk to other professionals. Find out what works the best for them. The advice given by your local computer store or software house may not have your best interest in mind.

When you find the right software look into on-site training. A day of on-site training is equivalent to weeks of hair pulling by your staff. On-site training can range from \$50-\$125 per hour but it is well worth the expense.

To assist you in the proper selection of software, Table 1 classifies certain office tasks and suggests software solutions that fit the size and complexity of your office. Since there are many products on the market that could easily satisfy these needs, I have included only those products which I have found to be useful for my office and other professional land surveying and engineering offices.



**TABLE 1**

Software Application	Small Offices Average Needs	Large Offices Complex Needs
Word Processing	PFS Prof. Write Q&A Write	Microsoft Word Word Perfect
Time/Billing/AR	TABS Plus Timeslips	OMS Wind II-4
Payroll	*DAC Easy Payroll	**
Full Accounting AR/AP/GL	*DAC Easy Acc 3.0 Bedford Acct'g	Solomon ACC BPI
Spreadsheets and charting	Quattro *Twin	Microsoft Excel Lotus 123
Hard Disk Data Backup	Fastback Plus *PC Tools Delux	Fastback Plus *PC Tools Delux
Hard Disk Recovery & Repair	*Mace Utilities *Norton Utilities	*Mace Utilities *Norton Utilities
Learning to use your computer	*Learning MS-DOS *Typing Tutor IV	*Learning MS-DOS *Typing Tutor IV

*\*These packages all have a list price of under \$100.*

*\*\*Most offices will use an integrated payroll package in conjunction with the AR/AP/GL accounting software they are using.*

These software packages listed in Table 1 can be obtained at your local software store, by mail or directly through the developers of the software. Some mail order houses offer nationally distributed software at savings up to 50 percent off list price.

Choosing the correct computer to meet the needs of a particular task is sometimes not clear. The computer terminology used today will confuse most first time buyers. In the early 1980s when the first IBM PC was released, the business world was amazed at the computing power available on their desktops. Today, the original IBM PC class of computers is reserved for elementary computational tasks.

There are three general classes of IBM style computers in use today. The major distinctions centre around the computer's Central Processing Unit (CPU). The selection of the right CPU for your task is simplified in Table 2.

The CPU types also reflect common CPU speeds. For example, an 80286-10 will operate at 10 Mhz and an 80286-12 will operate at 12 Mhz.

When buying a computer, your safest bet is a nationally advertised brand. I have reviewed and sold many types of computers and the following brands I would recommend for purchase: IBM, Compaq, Hewlett Packard, AST, Acer, Everex, ALR.

**TABLE 2**  
**COMPUTER HARDWARE BUYERS GUIDE**

Computer CPU Type	Recommended Hardware	Appropriate Tasks	Average Range of Retail Pricing
8088-10 8086-10	20 Mb HD 640 K RAM	Simple Accounting Word Processing COGO-low end	\$1100- \$2000
80286-10 80286-12 80286-16	40 Mb HD > 1 Mb RAM > Math. Coproc.	Time/Billing/AR/AP Database of Jobs COGO	\$1800- \$2800
80386-16 80386-20 80386-25	60 Mb HD > 3 Mb RAM > Math Coproc. Tape Backup Hi-Res Video H-Res Screen	CAD, COGO and Graphics	\$6000- \$13000

**IMPLEMENTING COMPUTERS IN YOUR OFFICE**

The following steps will help you implement a computer in your office for office management tasks.

1. Hold an office meeting and make a list of general areas in your office where your staff feels a computer will help improve efficiency. Prioritize this list with the most important tasks first. Some examples would be billing, accounting ledger, indexing job records and maps, payroll and correspondence.

Involve as many employees as possible in the initial planning stages. This will increase their acceptance of computers and dispel some of their fears. Also let them offer suggestions as to which procedures can be improved by automation.

2. Once these general areas have been established, list anticipated goals and jobs you want the computer to perform. An example is shown below:

Accounting:

- Client Statements
- Cheque writing
- Past Due Notices
- Accounts Receivable Reports
- Financial Statements

Job Records

- Fast Recall
- Flexible Report Sorting
- Lists of Jobs by client
- Record of Lot & Block
- Field Book & Page

These sublists will help narrow the software choices available to you. Be as specific as possible, putting the greatest needs at the top of the sublist. This list should be compared with the published features of software on the market. Ask specific questions to the person selling you the software. It is very easy to be sold on software that cannot perform what you want to accomplish.

3. Next, construct an employee/time analysis table. Approximate how many employees do these general tasks each day and the time they spend to complete them. An example is shown in Table 3.

4. Once you have determined these figures, sit down with a local computer consultant and explain your software and hardware needs. This will help determine the cost involved to accomplish these tasks. If sharing of hardware is a consideration, make sure you realistically analyze the time demands and scheduling of tasks.

<b>Office Task</b>	<b># Employees Involved</b>	<b>Hours a Day</b>	<b>AM/PM</b>
Accounting Collection of Bills	2	4	AM/PM
Timecards/Billing	2	12	PM
Job Research Filing Maps & Jobs	1	3	AM/PM
Payroll	1	—	PM

5. For larger offices, discuss with the consultant the option of networking the computers together. Networking allows file sharing between computers. This is a very useful feature when used with an integrated accounting or office management software product.

Make sure you look into yearly service contracts for the hardware you purchase. A typical service contract will cost between twelve percent and 15 percent of the list prices of the hardware. When your computer goes down, having a service technician on site to fix your computer within 24 hours is worth the initial expense.

With the proper selection of hardware and software, office automation nightmares can be avoided. The most important phase is planning. The better your list of expectations and needs, the faster your system will be in place. If you keep adding major “needs” as the project develops, your consultant and staff will be wasting a lot of time and your office’s money.

Finally, there are many good resources to get feedback on specific hardware and software products. Nationwide information services such as CompuServe and BIX allow you to ask manufacturers and other computer users, like yourself, how they rate the products you are considering.



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