unclassified, and available to all who ask or pay the purchase price of books or research papers in which results are published. Professor J. Barkley Rosser, director of the centre, says that "none of the work is in any sense secret. The problems on which we work are basic and usually pertinent to many fields of science".

For several years, the Army Math Center at Madison has been the target of picketing and sit-ins by young radicals, some of them students at the university, others just gypsy-like dissenters who wander across the nation looking for causes, usually identified as anti-war crusades.

On February 12, 1970, students broke windows in the Math Center during demonstrations against the General Electric Co., which had sought personnel recruits on the campus. The student dissidents accused GE of being a major defence contractor. Windows were broken in the centre a week later as a protest at the outcome of the Chicago 7 conspiracy trial. Last April 18, when President Nixon ordered the invasion of Cambodia, the building was attacked again. Thus, within a month, a building that had relative peace for nearly 12 years—it was built three years after the Math Center was established—became a target for student dissent. Rosser, who likens the centre to a "think tank", says that the centre received more than $1,000,000 in support from the Army last year.

Aware of the negative image of the Math Center on the campus, a 32-page detailed explanation of its work was sent to all members of the Wisconsin faculty last fall. The booklet described activities such as the centre's mathematical studies of what happens when a hole is punched in a sheet of metal or plastic. The centre has also undertaken studies of the properties of elastic substances, and the mathematics of wave action.

COMPUTERS

Living with Machines

from our New York Correspondent

A COMPUTER conference "committed to the proper management of computer technology for the greater good of mankind" was held last week in New York City. The 25th national conference of the Association for Computer Machinery stressed that scientists care about society and attempted to create dialogues between computer experts and computer users. At times the dialogue dissolved into competing monologues, but the will was there, and hopefully the way will follow.

The first day of the conference considered the application of computers to urban problems. Marvin L. Mannheim, a civil engineer at the Massachusetts Institute of Technology, delineated what he called the "myth of rationality", the belief that there is a single best course of action and that the computer can determine it. There can be no such thing, he said, since any definition of what is best is determined by values that differ for every group. Value discussions are hidden in everything we do, Dr Mannheim added, and since it is far more difficult to define the qualitative values than the quantitative, the latter are usually emphasized though the former are probably more important. Even when a programme attempts to assign numbers to social and aesthetic functions, it proves to be an almost impossible task.

David Grossman, the Deputy Director of the Budget for the City of New York, argued that the political process is already closely allied to decision-making but often there is too little guidance of any sort, so that what is really needed are measurements that could be looked at with a cold eye. Dr Mannheim agreed that this was one of the potential benefits of computer use in this field and narrowed his attack to those limited studies that only focus on parts of a problem in the belief that a computer can provide the total information necessary for reaching a decision. He felt that all a computer could attempt to do was fill in the blanks in the statement, "these are the key courses of action that could be taken, with these interest groups gaining and these losing."

Urban hardware was the theme of John P. Eberhard, Dean of the School of Architecture and Environmental Design at Buffalo. "The second generation of urban hardware now around us has replaced the first generation that was in operation for thousands of years," he said, "but all of the necessary components—steel, elevators, central heating, indoor plumbing, electricity, the automobile, and the telephone—were developed between 1880 and 1892." We are now in the process of a shift from this second generation to a third, and the old generation must eventually die. The computer industry must be prepared for the challenge of this third generation and must address itself to the problem of being a part of it.

An address by Ralph Nader, the consumer advocate, broadened this appeal to include all problems outside the realm of normal market forces, and brought him a standing ovation from the audience. He called for an information "Bill of Rights" to ensure that the efficiency of the computer's ability to gather and store information does not outpace the development of legal controls preserving society's right to privacy. He warned that if this does not come about soon there will be mass antipathy to the whole technology; "never underestimate the power of the citizen backlash to something it doesn't understand and feels is taking unfair advantage."

The legal question regarding privacy will soon become a major issue, Mr Nader predicted, because it must determine to what extent it is necessary to maintain barriers around people's lives in order to keep society functioning. Legal issues also arise in the area of monopoly power in the computer industry, for there is a danger that when new technology is dumped into an existing corporate structure, an archaic corporation may well block its own use of new advances and at the same time stop new companies from using these advances in dynamic ways. As computers are given increasingly complex tasks in this very interdependent society, they must be able to correct themselves and try new approaches if the entire system is not to be "gummed up", he said. "With such a complex technology, the professional societies must be the first to determine if adequate safeguards are being taken". Mr Nader also noted that "We are entering a period where we can almost program innovation, but the question is, are we going to apply this innovation to those areas that most need it?". Professional standards must provide criteria for choosing between professional, corporate, and personal disputes, "When a professional society allows its standards to atrophy, is the atrophy of the profession itself far behind?"