

Micrographics at Toronto City Hall

by RICHARD BISHOP

In 1972, the City of Toronto initiated a project to microfilm documents of historic value including assessment rolls, the minutes of City Council and the minutes of various committees. Since that time the City has committed itself to a much more extensive micrographics programme. The Technical and Records Services Section of the City Clerk's Department's Records and Archives Division now has a mandate from City Council to undertake micrographic and project design services for all City departments. In this way, file security and integrity along with effective control over the flow of information can be maintained from its creation to final disposition. Problems of storage are simplified and retrieval of information by civic employees and the general public is greatly facilitated.

Micrographic work done for the Buildings and Inspections Department may serve as a case in point. The Department generates an estimated 15,000 new records annually. Approximately 2,600 boxes of files dating back to 1928 and over 350,000 sets of building plans constitute the backlog of earlier records that have been transferred to the Records Services Branch of the Technical and Records Services Section. In accessing these earlier files, employees of the Buildings and Inspections Department withdraw an average of 30 files and sets of plans each day. In the past, withdrawal has been complicated by the fact that, in many cases, applications and permits for heating and plumbing systems and for the construction, alteration or demolition of residential, commercial and industrial buildings have been filed separately. The Technical Services Branch of Technical and Records Services now films Buildings and Inspections records as they are created. Several planetary cameras are used for this purpose. Although rotary cameras automatically move documents past the aperture of the lens at the same time as the film itself is in motion and therefore are capable of rapidly filming high volumes of documents, in the Buildings and Inspections Department project we require higher image resolution and greater flexibility for filming documents of various sizes. The contents of legal size files are photographed on 16mm film with small planetary cameras. The same cameras are also suitable for reproducing small drawings and plans on 35mm film. All other plans must be filmed on larger planetary equipment which can capture, in a single frame, plans up to a dimension of 140 cm x 110 cm. After processing, the exposed film is loaded by a mechanical inserter into microfilm jackets. These are filed by property address, thereby creating much greater ease of access than the

original filing system provided. The Technical Services Branch retains the master jackets to make updates as required, issuing diazo microfiche copies for daily use by the Buildings and Inspections Department. Using reader-printers and printer-enlargers, employees of the Buildings and Inspections Department are now able to access records without constant withdrawals from Central Records. Altogether, approximately 400 pages of documents are microfilmed each day including the backlog which is filmed upon each record request. Quality control tests are conducted to detect improper film density and resolution, residual thiosulfate, photographic and physical defects and errors in content. Steps to be implemented in the future will check for film brittleness and curl. At the end of current retention periods, micrographic copies of information scheduled for archival preservation are simply transferred to the City Archives.

The Technical Services Branch also conducts a programme for the Department of Public Works. It records approximately 10,000 survey drawings each year on 35mm film. The procedure for mounting differs from that in the Buildings and Inspections Department project; the exposed film is not loaded into jackets. Instead, each frame is inserted into aperture cards on which data relevant to the drawing is printed. Diazo duplicates are produced and distributed to the Department of Public works for daily access. Original aperture and diazo copy cards are also produced each year for approximately 500 bridge and subway drawings. In addition, photographs taken on a semi-annual basis for the detection of encrustment and structural deterioration in the City's sewer system and reproduced on 16mm film. Rather than cutting the film and loading each of these images into jackets, the Department has found that it is sufficient to retain the film in roll form. Retrieval time is reduced by loading the rolls into cartridges, thereby eliminating the necessity for the user to thread the film.

Toronto realty and business assessment rolls, when filmed, are left in the form of roll microfilm. Cartridges are more expensive and take up more storage space than single rolls. The City currently has all assessment rolls for the years 1834 to 1915 on microfilm as well as those from 1948 to the present. Work continues on a programme to film the remaining rolls in reverse chronological order using a planetary camera with 35mm film. It takes one operator approximately one month to film, to archival standards, the assessment rolls for one year. After filming, the original negatives are stored in a climate-controlled, commercially-owned storage vault. The Records Services Branch retains vesicular microfilm copies of the assessment rolls for the post-1915 period while film pertinent to the earlier period is housed in the City Archives. Although researchers at present must come to City Hall to study assessment rolls, in future distribution of microfilm duplicates to public libraries may be possible.

Along with source document microfilming, the City's use of Computer Output Microfilm (COM) has been increasing over the past few years. The number of frames transferred each year from magnetic tape directly onto microfilm approaches 5,000,000. As COM production cameras are still quite expensive, an outside service bureau is contracted to do the original filming. From the original positive film, duplicate vesicular copies of COM records are produced for the City Property, City Parks and Recreation, Finance, Public Works and Metro Social Services Departments. COM has one tremendous advantage. Computer data becomes legible to the human eye with the aid of a simple reader-printer. As

a medium for long-term retention of data, film is also much more durable than magnetic tape. Because of the advantages of unitized over serialized microforms, Toronto City Hall, in 1979, will be converting its COM operations entirely to Computer Output Microfiche rather than film.

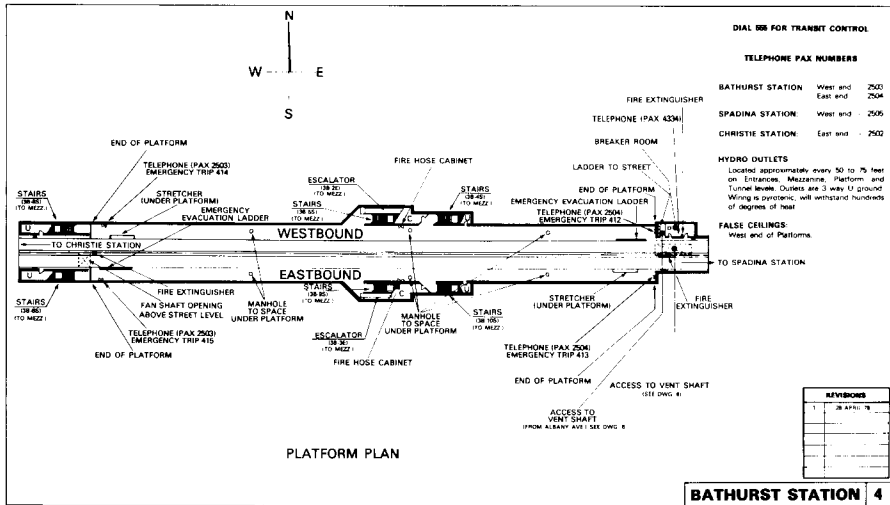
Apart from aiding record security and retrieval, micrographic applications can also play a dynamic role in day-to-day operations. For example, the Toronto Fire Department is implementing an information system employing microfiche which will be interfaced with a computer for immediate updates. In the event of a serious subway fire, a designated District Fire Chief operating from a mobile van, or Tactical Command Vehicle, will be able to refer to fiche containing eight images for each subway station. The images include over-all street maps and plans indicating locations of stations and hydrants, locations of entrances to the platform levels as well as isometric drawings of all vent and fan shafts with detailed explanations on how to enter shafts when visibility is limited by smoke. Street indices, maps and grids showing up to 10,000 nodes keyed into street addresses will also be microfiched as well as pre-fire planning charts and information on water supply, expressways, harbour facilities, lumber yards and stockpiles of hazardous chemicals.

Information on individual buildings, collected and updated by the Fire Prevention Division of the Toronto Fire Department, will be made available as well. This will include:

- Over-all street maps showing buildings and street numbers.
- Water supply maps showing main sizes and hydrant locations.
- Basic floor plans showing room layouts, stairways, special hazards, etc.
- Exposure hazards: height, proximity to other buildings.
- Building contents: ordinary or specific.
- Special contents: chemicals, acids, paints and varnishes, radioactive materials.
- Natural gas locations: lines, shut-offs, meters.
- Electrical equipment.
- Location of sprinkler valves.
- Special areas to be protected from water: computers, files, records, machinery, etc.
- Building construction: age, type of structure, false ceilings, additions, etc.

As the above data is formatted for microfiche, coding systems will be added for easy and rapid accessibility by either the Communications Dispatcher operating from a central switchboard, or the District Fire Chief in command.

Later this year, we will begin implementation of a vital records programme. This will entail the identification of all records that we consider crucial to carry on municipal government activity in the event of a natural or man-made disaster. After identification, these records will be filmed and security copies will be deposited outside the Metropolitan Toronto area. A vital records programme will enable the City to conduct basic emergency functions, to restore government and service operations to normal state and finally, to preserve the legal rights of local corporations and individual citizens. The records necessary to accomplish



Microimage of subway station platform plan, now available as a fire fighting aid. (Toronto Fire Department)



Melted subway cars after the 1976 Toronto Transit Commission subway fire. (Toronto Fire Department)

one or more of these purposes will be drawn from the following vital record subject classifications: health and welfare, public safety, property, fiscal, legal, personal and legislative. The documents that will be required immediately following any shock phase will be kept in hard copy form permitting instant accessibility. Documents required for secondary and tertiary stages of recovery will be microfiched.

In the 1980s, technological developments occurring now will likely bring about even broader applications at Toronto City Hall as micrographics assumes greater importance in total information handling. Special reader-printers will permit the use of ultrafiche which records several thousand document pages on a single sheet of 105mm film. There may also be more use of colour. The feasibility of using colour microfilm to photograph our collection of coloured glass slides is presently being studied.* Finally, the City's facilities for computer-assisted text editing, phototypesetting and the storage and retrieval of information may be interfaced with microforms. OCR or Optical Character Recognition coding will allow material already filmed to be re-edited and prepared for duplication onto COM.

In addition to technological change, the future development of microforms depends on clarification of their legal status. As records captured on COM may never be converted to paper they must themselves be considered to be original documents. Provided the inherent data meets prescribed standards of legibility, COM, like magnetic tape, is admissible as evidence in Canadian courts of law. The matter of microfilmed copies of paper records remains somewhat of a clouded issue. In the Province of Ontario alone over 200 statutes control retention schedules for documents but provide no guidelines for the destruction of municipal government material that has been filmed. As long as this situation exists, effective cradle-to-grave records management will continue to be hampered.

* For further details on this application, see "Microfilming Glass Negatives", *Archivaria* 5, (Winter 1977-78): 148-150.

Résumé

La ville de Toronto a élaboré plusieurs applications du procédé de reproduction micrographique qui démontrent autant la flexibilité de leur programme de gestion de documents que les avantages qu'on peut en retirer sur le plan de l'accroissement de l'information.