CAN VENICE BE SAVED?

Water and Venice have always a complicated relationship. The world's most famously wet city is also one of its most famously endangered ones, forever being flooded by its signature canals. Even since the 14th century, Italian engineers have dreamed of ways to control the water. Now a solution may be at hand: the Moses project, a vast series of sea gates that may finally the sodden city dry.

The need for Venetian water control has never been greater. Especially high tides have caused major floods 10 times in the past 67 years alone, most diastrously in 1966 when the water in parts of the city climbed to more than 1.83 m. Compression of sediment under the city, along with rising sea levels, often causes smaller floods, shutting down businesses and making sidewalks and squares impossible.

The source of the problem is geography. Venice is primarily a small cluster of interlocked islands set in the northern end of a 536-sq.-km lagoon. A long ridge of land seperates the lagoon from the far larger Gulf of Venice except at three major inlets. These openings allow high gulf tides to become high Venetian tides, with the water sometimes climbing far enough to swamp the city's seawalls.

In 1984 a commission composed of Italy's 50 largest engeneering and construction firms was formed to find a way to control the water flow through the inlets, and Moses is it. Moses, an acronym for the plan's technical name as well as a lyrical reference to the parting of the Red Sea, calls for 78 hollow sea gates—each up to 5 m thick, 20 m wide and 27.5 m long—to be hinged to foundations, or caissons, in the seabed and to lie flat there. The gates would usually be filled with water, but when tides rises to a height of 1 m or more, compressse air would pump the water out. The free end of the gates would then float upwards, breaking the surface after about 30 minutes and sealing off the inlets. Sea locks would permit permit ships to pass while the gates are up.

The project—which would take as long as ten years and cost at least $2.7 billion—could still run into obstacles, especially given the fickle nature of Italian politics. Concerned that gates would be raised so frequently and remain there so long that they would cause water in the lagoon to grow stagnant, Greens are making that argument in an environmental-impact review that could delay or even scuttle construction. Even so, this is the closest Venice has come to a permanent solution to its water problems in 700 years. By local bureaucratic standards, that's not too bad.

ADDITIONAL INFORMATION TO THE GATES.

The gates are made of steel covered with a resistant coating to prevent building of algae and crustaceans. Every five years they're are scheduled for removal and cleaning.

The 78 hollow sea gates are filled with water most of the time and remain out of sight in a foundation or cassion. During especially high tides, compressed air flushes out the seawater. Within 30 min. the gates rise to the surface and block the inlets. When the danger passes, water is admitted back into the gates, causing them to sink within 15 min.

PREFACE TO THE LaTeX-GUIDE

A new edition to "A Guide to LaTeX" begs the fundamental question: Has LaTeX changed so much since the appearance of the third edition in 1999 that a new release of this manual is justified?

The simple answer to that question is 'Well ....' In 1994, the LaTeX world was in upheaval with the issue of the new version LaTeX 2_ε, and the second edition of the 'Guide' came out just then to act as the bridge between the old and new versions. By 1998, the

initial teething problems had been worked out and corrected through semi-annual releases, and the third edition could describe an established, working system. However, homage was still paid to the older 2.09 version since many users still employed its familiar syntax, although they were most likely to be using it in a LaTeX 2$_\varepsilon$ environment. LaTeX has now reached a degree of stability that since 2000 the regular updates have been reduced to annual events, which often appear months after the nominal date, something that does not worry anyone. The old version 2.09 is obsolete and should no longer play any role in such a manual. In this fourth edition, it is reduced to an appendix just to document its syntax and usage.

But if LaTeX itself has not changed substantially since 1999, many of its peripherals have. The rise of programs like 'pdfTeX' and 'dvipdfm' for PDF output adds new possibilities, which are realized, not in LaTeX directly, but by means of more modern 'packages' to extend the basic features. The distribution of TeX/LaTeX installations has changed, such that most users are given a complete, ready-to-run setup, with all the 'extras' that one used to have to obtain oneself. Those extras include user-contributed packages, many of which are now considered indispensable. Today 'the LaTeX system' includes much more than the basic kernel by Leslie Lamport, encompassing the contributions of hundreds of other people. This edition reflects this increase in breadth.