two other goals of the working group are to be reached, namely, the provision of a statement of what is meant by a good Subject Heading Language and the provision of a theoretical rationale for particular standards or guidelines for Subject Heading Language construction and application.

The working group has moved forward since this 1993 meeting, and it has carried out a survey of each principle as illustrated in statements and examples taken from various systems. Texts from sources published in languages other than English were translated. This survey should be published sometime in the next year. It will become another important document in the history of internationally accepted principles for subject heading languages. The working group is to be commended for its diligence, steadfastness, and cooperative spirit.

What impact the group's work will have remains to be seen because developments in cyberspace might outdistance it very soon. Hybrid systems promise to be the new standard, with clearly defined distinctions between pre- and postcoordinated systems a thing of the past. Our field may still have some impact, however, if we are seen to provide structure in the new information environment of hypertextual displays and graphic user interfaces.— *Pauline Atherton Cochrane, Graduate School of Library and Information Science, University of Illinois, Urbana-Champaign*

Academic Libraries as High-Tech Gateways: A Guide to Design and Space Decisions. By Richard J. Bazillion and Connie Braun. Chicago: ALA, 1995. 225p. $36 (ISBN 0-8389-0656-7). LC 95-14035.

Digital libraries are in our future. When the wholly digital research library will emerge, how aggressively we ought to work to achieve it, and how we might best do so are matters presently at issue. Certainly it is now technologically possible to create a true digital library, but a complex of psychological, social, legal, and economic barriers require that we proceed incrementally. Yet even if the wholly digital library were currently within our grasp, it is arguable whether it would be a desirable end when one considers the library as a physical place for the bringing together of intellectual, social, and service agents and values to create a whole much larger than the sum of its parts. But assuming the wholly digital library will happen at some point, and assuming we find it desirable from cognitive, social, and financial perspectives, the question remains: How do we get from here to there?

While *Academic Libraries as High-Tech Gateways* does not address this question directly, it does bring to the fore and at least touches on some important issues that afford us the opportunity to reflect on ways in which academic libraries are evolving in response to the digital revolution. The objects of study in this volume are the libraries of Brandon University (Manitoba) and Indiana University–Purdue University in Indianapolis; Lilly Library, Earlham College (Indiana); Leavey Library, University of Southern California; Wehr Library, Viterbo College (Wisconsin); and the Information Arcade, University of Iowa Library. All six facilities are in various ways innovative in their adaptation to, or incorporation of, digital technology in space, design, and services. These libraries might fairly be regarded as transitional libraries that collectively have taken a major step toward achieving the future library. Although Bazillion and Braun apparently intend this volume for the planner of a new facility, and so focus more on the practical aspects of planning and decision making than on the ideational bases for these and future libraries, they do provide several object lessons that all who contemplate the future of academic libraries would do well to consider.

It is unclear for whom exactly this book is intended, however, and it might be an uncertainty in the authors' minds that leads to a rather stark separation between the practical and the ideational. Two works in fact seem to be stitched together. The first, comprising chapters two, three, and four, is a detailed, highly practical (and for the hands-on project manager, potentially quite valuable) review of issues and options related to the building shell,

physical plant, space calculations, need for flexibility and modularity in planning, networking, and wiring, interior design, and furniture. Many of the focused discussions and assessments of choices to be made are quite impressive, clearly displaying considerable experience and thoughtful insight on the part of the authors. For example, the nearly twenty pages on instructions for and pitfalls in calculating shelving, study, and work space are of value to all but the most experienced veterans of this activity, as are the twelve pages on wiring and networking options. Undoubtedly these chapters appeal to librarians with limited planning and building experience and perhaps to architects with little or no exposure to academic libraries or information technology.

The second work, contained in the preface, chapter 1, and chapters 5 and 6, is decidedly different in character and would seem to speak to a very different audience, most likely the conceptualizer looking for frameworks within which ideas might be articulated. Bazillion and Braun begin their book with the characterization of the facilities at hand as "teaching instruments" (p. xii) for instruction in electronic research skills, noting briefly that the proliferation of personal laptop computers and of arcades and information commons constitute "the most important influence on library design in the 1990s" (p. xiii). But the promising opening theme is suspended at this point in favor of a didactic survey of information technology trends (e.g., CD-ROMs, Internet, electronic publishing, copyright, librarian roles) and the core chapters on physical plant issues. Not until the beginning of chapter 5 (p. 130), where they enumerate eight leading characteristics of the teaching library (including ubiquitous power and data, instruction rooms, specially designed service points, and an arcade or a commons for the dynamic interaction of workstations, users, and staff), do they return to the conceptual high ground. Had this latter discussion occurred early on, the reader would have been able to advance through the bulk of the work with increased understanding of the larger con-text for making the broad range of architectural and physical-plant decisions that are dependent on the overall programmatic philosophy and direction of the facility.

Better yet, a full integration of the two distinct portions of the book might have addressed a series of important questions and examined their practical consequences:

- How are these new academic library facilities integrating paper and electronic technologies on the one hand and traditional and innovative services on the other hand, and what space-planning and design trade-offs thereby arise for the planner of a new facility?
- To what extent were the original concepts behind these facilities realized, and what trade-offs were made as they were built?
- How has broad access to electronic bibliographic and full-text resources, convenient entry into and easy navigation of local and worldwide networks, and ready availability of productivity and creativity software, all from a single workstation within a library setting (what I would term "holistic computing"), compelled us to redefine libraries and library services?
- And what are the space and design consequences of this development?

The dichotomy is unfortunate also because it precludes an assessment of the six facilities that would enable us to extrapolate lessons and advice for the planners of the next wave of transitional libraries on a conceptual level beyond rather narrow physical-plant decisions. As it stands, concluding discussions on the need for library involvement in the curriculum and the need for instruction in electronic research skills seem out of place and eerily disembodied in relation to the middle chapters and the apparent primary purpose of the work.

Despite some problems with the structure of this work, Bazillion and Braun have in fact provided us with a worthwhile contribution to the expanding dialogue on the future of academic libraries. While they are (legitimately) focused on the progressive library of today rather than the library of tomor-

row, they do in fact stimulate considerable thought about what it is in these facilities that we ought to scrutinize for our collective well-being. For instance, their discussion on librarians as teachers (p. 136–43) points up the need to design our facilities with maximum accommodation for instructional opportunities. Their description of information arcades and commons, when we associate it with separate overviews of instruction for electronic research skills and holistic computing, precipitate a cluster of questions regarding the kind of core public service areas and human support systems we need to design into academic libraries for the foreseeable future. And their confirmation of the continuing value of paper collections begs a series of questions related to the integration of paper and electronic technologies across the design, space, and services continuum.

In sum, this remains a good read for either the planner or the idea-monger if the reader is willing to make a major accommodation for at least half the work. The person contemplating public services programs in the next generation of libraries is not likely to be interested in lighting options (p. 70–76), and the project manager preoccupied with lighting issues is not likely to be much concerned with a generic syllabus for teaching information technology (p. 141–42). But in the end, no one thinking about a new academic library construction, renovation, or remodeling program can afford not to read and to learn from this book.—*Chris Ferguson, Leavy Library, University of Southern California, Los Angeles*

Managing Internet Information Services. By Cricket Liu and others. Sebastopol, Calif.: O'Reilly, 1994. 630p. $29.95 (ISBN 1-56592-062-7).

O'Reilly released this "Nutshell Handbook" at the end of 1994, and given the pace of change on the Internet, it is surprising that most of it is still useful to people who want to provide information services on the Internet, even though the book devotes too much space to setting up Gopher systems and never mentions the Netscape web browser. The preface is careful to note that the bulk of the book is aimed at people who are competent UNIX system administrators or "those with fairly strong UNIX knowledge," but asserts that the two chapters at the beginning and the two chapters at the end of the book are appropriate for "less technical people" (p. xxvi). The first chapter gives an overview of what the Internet is and different ways to be connected. The second chapter gives a summary of the kinds of services it is possible to set up (finger, telnet, mailing lists, FTP [file transfer protocol], Gopher, WAIS [Wide Area Information Server], and World Wide Web) and offers some ideas on reckoning the technical and human requirements for running such services. The next twenty-six chapters move from general to specific with each type of service—with how-tos on setting up and administering particular software programs that run on computers with the UNIX operating system. And there are a couple of chapters on ways to enhance the security of systems. Systems administrators that set up and use as few as one or two of these programs (most of which are freely available over the Internet or included in most implementations of the UNIX operating system) would benefit from having *Managing Internet Information Services* on the systems administrator's bookshelf along with whatever more in-depth documentation they can get their hands on, such as the documentation that is distributed with each program. However, this book provides a reassuring step-by-step approach that is often missing from program documentation.

The authors conceive the tasks presented in the book as typically performed by people with two distinct roles: the systems administrator in charge of the performance of the computer and the installation and configuration of the programs, while the "data librarian" is responsible for the organization and presentation of the information. In the library world, this might mean that systems librarians would do the system administration, while the data-librarian function would be performed by catalogers or reference librarians. Twelve of the thirty chapters in the