

SMALL MUSEUM DESIGN: A CASE FOR TECHNOLOGY TRANSFER

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UMBRA VERSA: THE ABSTRACT - Small museums and their small-thinking supporting institutions could benefit from the application of two traditional instruments for survey and design: the Luopan and the Planispheric Astrolabe.

AB OCCASU: THE DISCUSSION

Oriens: The Luopan

The Luopan has long been used in China to predetermine the ability of a planned building to suit its desired function (*Feng Shui*). The use of the Luopan is both an art and science going back thousands of years. The geomancer takes into account numerous inputs, the continued health of the occupants, location of major bodies of water, proximity to transportation routes and topographic features. The Luopan serves to balance these and other cosmic forces and arrive at a functional building that will bestow good fortune and longevity to all who live and work in it. Dimensions of buildings, arrangement of walls, doors and windows are all guided by the Luopan, and the experience of its user.



Figure 1. The Author employing his Luopan and Rule of Undesirable Dimensions. Photo: Pintax.

The current trend to incorporate museum collections in historic buildings designed for other uses (schools, homes, factories) has led time and again to major financial headaches and stress for those involved. The author humbly proposes that museum advisers and conservators be trained in the use of the Luopan and apply it toward determining exactly those existing components of a planned structure which do not conform to a building's intended use as a museum. By the same methodology, features of a dysfunctional museum structure could be analyzed and only those inappropriate and threatening structures need be corrected.

Field trials of the Luopan currently in progress have confirmed the author's hunches and funny feelings about the sites investigated. To give a simple

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example; an historic-site church was discovered to have been wrongly relocated along the meridian. Further proof of the Luopan's power is recorded in this instance when, in the following year, a tornado tried to re-orient the building and correct the cosmic imbalance.

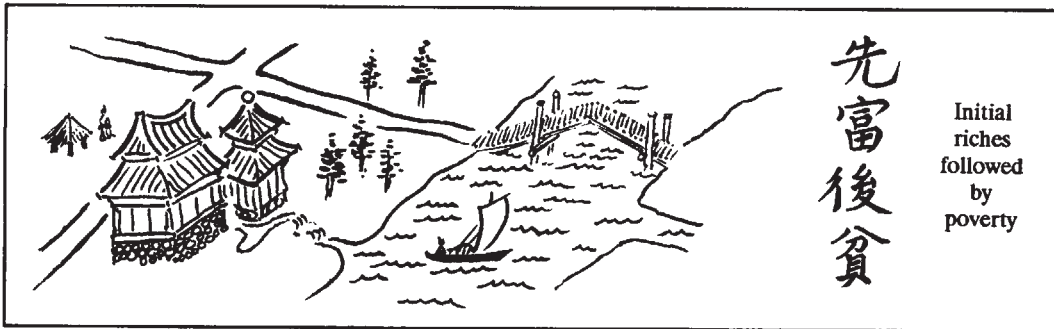


Figure 2. Sample Divination - A building in two parts, north of water, west of a bridge, separated by a stream.

While the apt use of a Luopan traditionally requires decades of training under an accredited master and concomitant long experience, there are, oddly enough, several good picture books available in English, suitable for incorporation into academic programmes and summer internships. By copying Figure 1, a suitable instrument is constructed from scrap matboard, string and plywood. The acquisition of a small toy compass to be inserted into the centre completes the Luopan¹.

Occidens: The Planispheric Astrolabe

The origins of this instrument are traced to ancient Greece as recently as 300 BC. Mass popularity was achieved subsequently in the Middle East by 800 AD and the instrument finally spread throughout Europe by the early Middle Ages. The planispheric astrolabe is a complex synthesis of celestial mechanics through analogue computation, reducing multi-dimensional geometric problems to an incomprehensibly engraved two dimensional model². Further reduction to a one dimensional model is well underway.

¹Old instrument available from East gessoed wood panel of extreme delicacy prone to crack. Good study for student of conservation laboratory.

²A possible explanation to the widespread belief that the earth had to be flat, if only to fit into a flat firmament.

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As with the automobile, the early, clumsy, hand built, riveted designs were later outstripped by glitzy gold-plated German engineered machines. Planispheric astrolabes were often miniaturized, but occasionally, ultra precise super-astrolabes were produced some eight feet or more in diameter, affordable only to potentates. These storehouses of astronomical knowledge, stereographic projection, chronometry, geometry and whimsy are not to be confused with the cheaper tourist items littering North America since the Renaissance.

For use in small museums the author recommends a six or eight inch diameter, full-featured astrolabe with facility for time telling, surveying, trigonometry, navigation, astrology, augury and prayer. While the Chinese instrumentation is able to discern and solve subtle structural problems, the planispheric astrolabe is at its best when working inside the museum on a daily basis. Figure 3 shows the author gainfully employing a planisphere in surveying just such a small museum³.

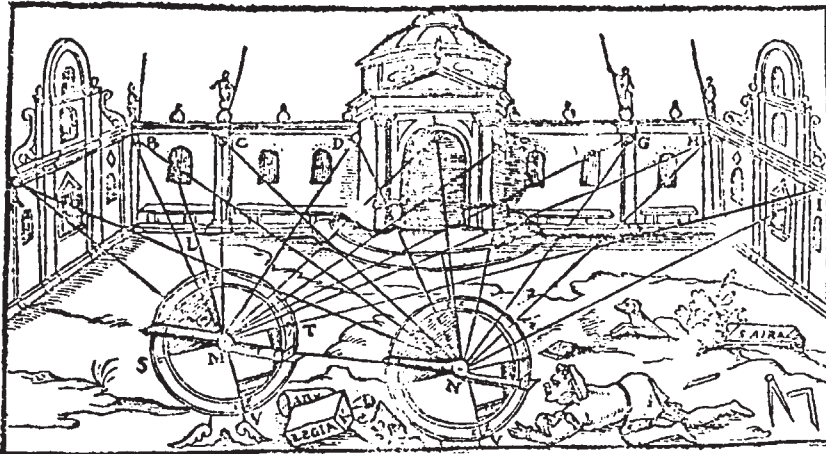


Figure 3. The Author surveying a small museum. Photo: Lieka.

During the survey, the author has plotted the altitude and amplitude of sunlight penetrating the fenestrated exterior of the test museum. By simple rotation of the astrolabe's rete (star map), and copious use of thumb-tacks, string, indelible marker and a protractor, the complete display space was marked out. Placement of objects around the

³Editors' note: While primacy of the author is not yet conclusively determined, the Editor has felt the reported application of such importance as to include it before it appears simultaneously in several other journals.

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resulting analemmatic curves avoids major losses due to fading. Monthly movement of artifacts between isosols⁴ also encourages a high degree of sanitation, development of a deaccession policy and prevents rugs from sticking to floors.

The time-telling feature of a Planispheric astrolabe is used for setting clocks at historic sites which predate the introduction of time zones. As the astrolabe operates on local time⁵ it also solves the problems in accurate reconstruction of early railway timetables provided the trains are operated at historic velocities.

Investigation into application of the height and distance solving capability of the planispheric astrolabe are currently underway in stone conservation and historic battle reenactments (See Figures 4 and 5).

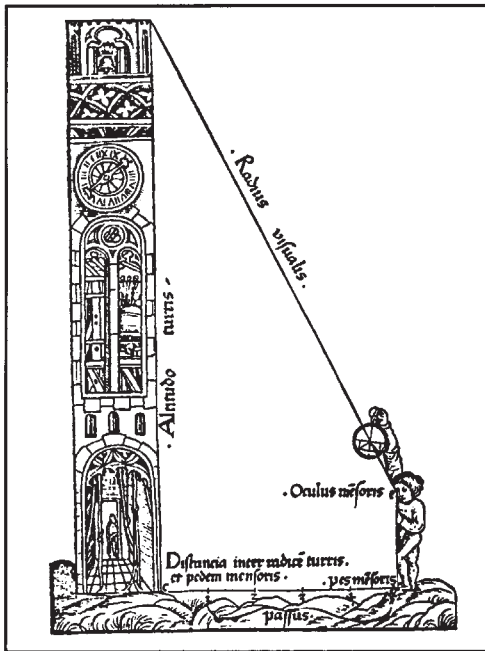


Figure 4. The Author earning his retainer on a big masonry problem. Photo: Comtax.

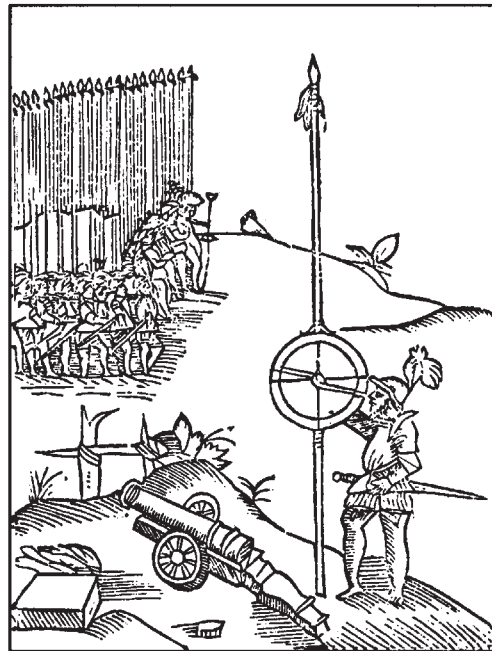


Figure 5. The Author using his planispheric astrolabe to disadvantage the enemy. Photo: Hasabladder.

⁴Areas of equivalent sun exposure.

⁵As did, perforce, the Venerable Bede's shadow.

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UMBRA RECTA: THE CONCLUSION

Paraventure the ability of technology to attract attention as a function of one over the cube of its usefulness is well documented by the size of your wednesday newspaper. Howsoever, fusion of Oriental orientation to preventive orientation with Western corrective Cartesian conservation analysis is progressively demonstrated. Happily enough, once the mechanics are understood, the Luopan and Planispheric Astrolabe provide incisive and accurate tools for conservators in their never-ending-ever-beginning search for the true path.

OB TUSE AND ORIZONT: THE AUTHOR

J.K. Thostrang was a professional astrolabe maker who is otherwise employed. He is the member of CAPG, the 'Canadian Association of Paleogeometers and Geomancers' as well as author of numerous publications, including: *180 Protractor Projects*, *The Short-cut Euclid*, *French Curves*, *a Sidelong Glance* and *The Pop-up Planisphere*.

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- 4) Wong, Mai B., *The New Way of Feng Shui*, Beijing, Year of the Rooster.