

Tile/Brick Distribution System by Computer

So Kato

Masayoshi Kato

Yozo Nagatani

Sumihiro Sakai

(Japan)

1. PREFACE

For facing inner or outer walls of buildings with tiles or bricks, the tile/brick (named tile generically in this paper) distribution drawings are indispensable. Especially for outer walls, as measurements of sashes or concrete bodies are set according to the tile distribution drawings, they should be drawn ahead of design drawings of sashes or concrete bodies. In case of tiles manufactured to order, the distribution drawings should precede other processes. The system of tile distribution by computer was developed to reduce labor and time for tile distribution.

2. MERITS OF TILE DISTRIBUTION BY COMPUTER

Use of computer brings the following merits:

- * Speedy drawing
- * Accurate and easy drawings
- * Reduce time for design
- * Prompt coping with a change in design
- * Cost reducing by efficient distribution and improved workability
- * Shortens calculating time and saves labor

3. SUMMARY OF THE SYSTEM

Indications for tile distribution are given orally and distribution drawings can be seen at any time. Also hard copies can be provided immediately for discussion.

There are three methods of distribution.

- a. Tiles are distributed in the allowance of expansion joints to fit the finishing measurements of the design drawing.

- b. Tiles are distributed by the finishing measurements of the design drawing and the joint width on the same wall is unified by adjusting placement of expansion joints.
- c. By setting the joint width first, tiles are distributed adjusting the finishing measurements and placement of expansion joints.

4. PROCESS OF THE SYSTEM

The system of tile distribution by computer is composed by the Character Display and Graphic Display as the Graphic Work Station, and Hard Copy Unit and Line Printer as the Display scene.

Fig. 1 shows the outline and process of the system.

Data of measurements and bond pattern of tiles, length and height of wall, placement of expansion joints, use of borders or not, reference line and placement of openings are drawn up from the design drawings, related drawings and request of clients.

The basic distribution is checked by the data except openings and reference line, and the result is output as check lists. (See Fig. 2)

The check list shows several patterns of distribution and the basic pattern is decided considering the total joint. The most suitable placement and measurement of openings are decided by these basic data.

The result is displayed on the Graphic scene and checked. After amendment and addition of data, the final data are decided.

By adding measurement data to these final data, the tile distribution is plotted out. The required shapes and measurements are calculated from these distribution data at the same time. Fig. 3 shows the flow chart of these process.

5. PAST EXAMPLES AND FUTURE PROSPECT

Our past examples count 12 cases. Clients include architects, general contractors and sub contractors. Bond patterns include stretcher, German, English, Flemish, straight and grid for floor. Without precedents, the development of this system had difficulty in showing its full capacity, because of repeated reorganization of logics or change of planning vision by demands, but the practical business helped confirmation of the capacity of total system and making faculty to be added and points to increase efficiency clear.

With development of its capacity, the tile/brick distribution system by computer will gain popularity and contribute to the improvement of tile/brick facing works.

Table 1

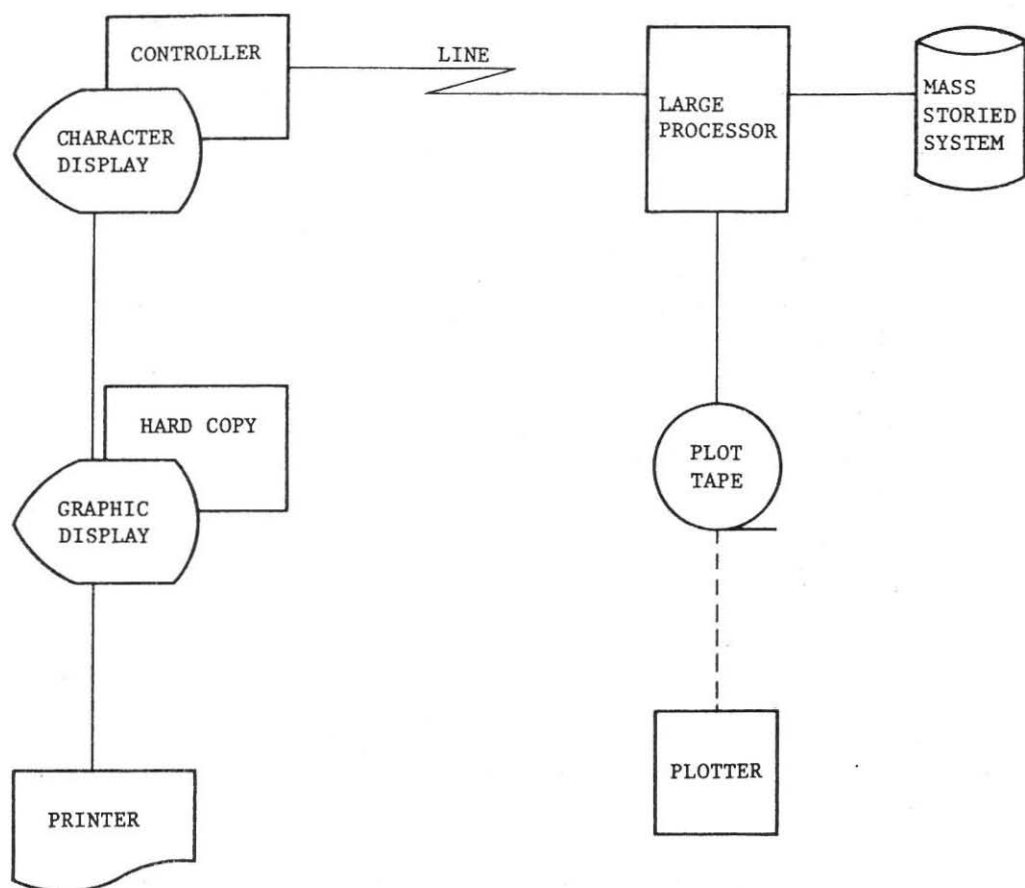


Table 2

***** K U T A I , E X P A N S I O N C H E C K L I S T ***** CONTROL: 1 DATE 11/12/81

KABE NO. 22 RLX: 11335. RLY: 17750. TX: 210.00 TX2: 100.00 TXM: 10.00 TY: 60.00 TMY 9.71 TSUMIKATA: 7277

| -----INPUT DATA----- | | | | | +-----SMALL-----+ | | | | | +-----LARGE-----+ | | | | |
|---------------------------|---------|---------|-------|-----|-------------------|---------------|-----|-----|-----|-------------------|---------------|-----|-----|--|
| PART NO. | XS | WIDTH | MOD | MOD | MEJI | YAKUMONO | 2CH | KOG | MOD | MEJI | YAKUMONO | 2CH | KOG | |
| 77" 1 | 0.0 | 3775.00 | 68.82 | 68 | 12.81 | 210.00-210.00 | 15 | 0 | 69 | 9.41 | 210.00-45.00 | 16 | 0 | |
| | | | | | 12.65 | 155.00-45.00 | 16 | 0 | | 9.41 | 155.00-100.00 | 16 | 0 | |
| | | | | | 12.65 | 100.00-100.00 | 16 | 0 | | 9.41 | 100.00-155.00 | 16 | 0 | |
| | | | | | 12.65 | 45.00-155.00 | 16 | 0 | | 9.41 | 45.00-210.00 | 16 | 0 | |
| 77" 2 | 3775.00 | 20.00 | | | | | | | | | | | | |
| 77" 2 | 3795.00 | 3765.00 | 68.64 | 68 | 12.19 | 210.00-210.00 | 15 | 0 | 69 | 8.32 | 210.00-45.00 | 16 | 0 | |
| | | | | | 12.06 | 155.00-45.00 | 16 | 0 | | 8.82 | 155.00-100.00 | 16 | 0 | |
| | | | | | 12.06 | 100.00-100.00 | 16 | 0 | | 8.82 | 100.00-155.00 | 16 | 0 | |
| | | | | | 12.06 | 45.00-155.00 | 16 | 0 | | 8.82 | 45.00-210.00 | 16 | 0 | |
| 77" 3 | 7560.00 | 20.00 | | | | | | | | | | | | |
| 77" 3 | 7580.00 | 3755.00 | 68.45 | 68 | 11.56 | 210.00-210.00 | 15 | 0 | 69 | 8.24 | 210.00-45.00 | 16 | 0 | |
| | | | | | 11.47 | 155.00-45.00 | 16 | 0 | | 8.24 | 155.00-100.00 | 16 | 0 | |
| | | | | | 11.47 | 100.00-100.00 | 16 | 0 | | 8.24 | 100.00-155.00 | 16 | 0 | |
| | | | | | 11.47 | 45.00-155.00 | 16 | 0 | | 8.24 | 45.00-210.00 | 16 | 0 | |
| ** 11335.00 204 | | | | | | | | | | 207 | | | | |

Table 3

