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MULTIDIMENSIONAL GRAPHICAL MODEL FOR THE ANALYSIS OF FLOW AND CIRCULATION IN HOSPITALS

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Background

Circulation spaces in hospitals constitute the main focus of their structure, since they facilitate the flow of patients, as well as that of the staff and resources, to guarantee the provision of adequate care.

Aim

To develop a methodology that facilitates the graphic analysis of the circulations that occur in hospital centers, in order to detect the problem of flows that affect communication spaces.

Methods

The research is designed as a case study where a Spanish hospital is analyzed in detail from documentary analysis and non-participant observations. Firstly, the different means of arrival at the hospital are identified, then the access points to the building, the vertical communication cores and the horizontal circulation areas. In addition, each of the functional units of the hospital are delimited and their doors are classified by the user groups that can access them.

Results

The graphical representation shows the routes of the different types of users (inpatient, outpatient, healthcare staff and non-healthcare staff) and their intersections.

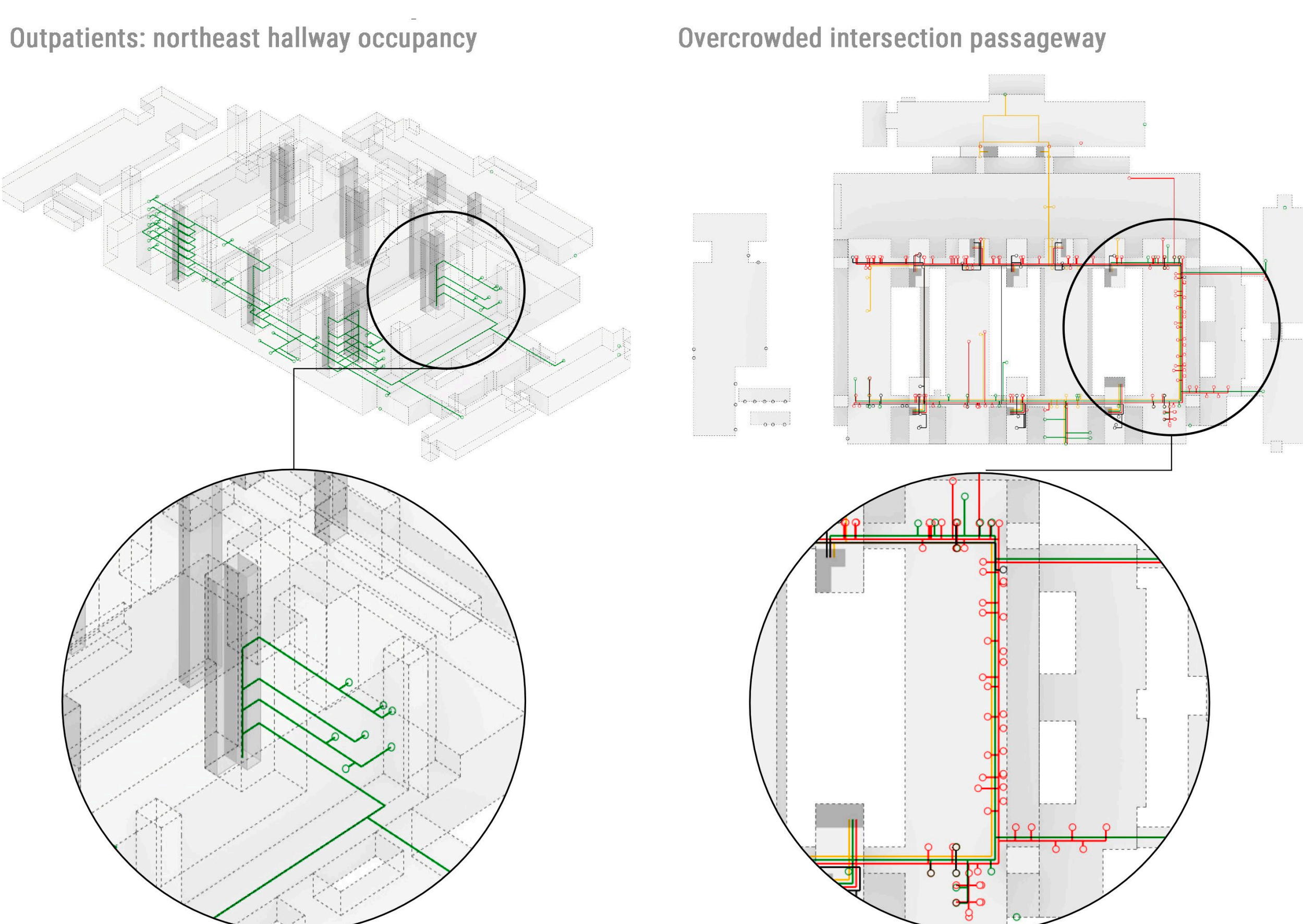


Figure 2. Examples of problems visible in three dimensional schemes.

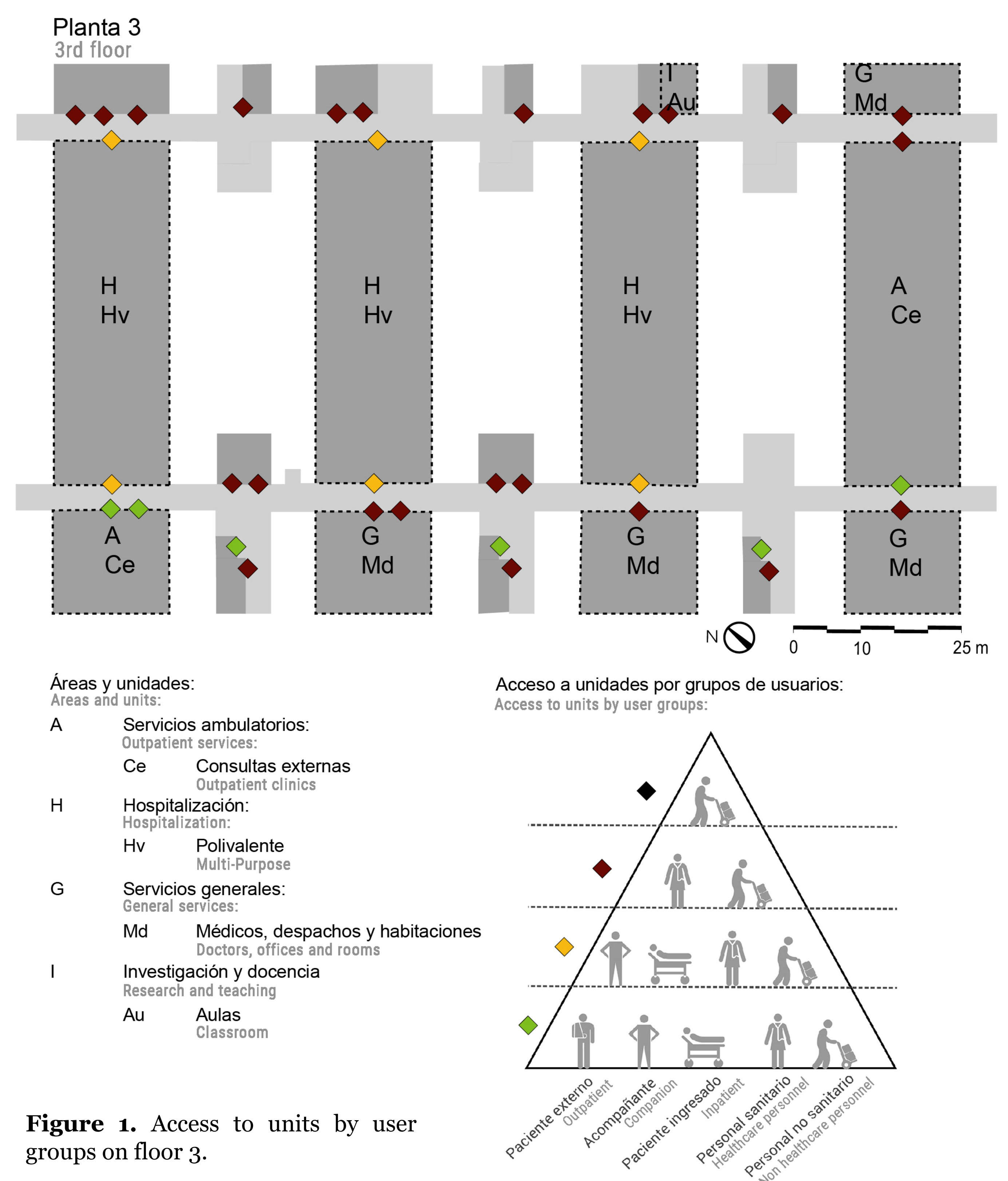


Figure 1. Access to units by user groups on floor 3.

Conclusion

Through the study of the exposed diagrams, it is possible to detect the conflictive spaces and the possible applicable improvements. In short, it is a graphical methodology system that can be used for other health complexes and can serve for the efficient management of their internal public spaces, as well as support for the refurbishment or projection of new hospital facilities.

Reference (published paper)

Domínguez Gómez, P., Gutiérrez Pérez, N., Cambra Rufino, L., Sánchez-Jáuregui Descalzo, T., de Miguel Sánchez, M. y Chías Navarro, P. (2023) «Modelo gráfico multidimensional para el análisis de flujos y circulaciones en hospitales: Caso de estudio: el Hospital Universitario Príncipe de Asturias», EGA Expresión Gráfica Arquitectónica, 28(49), pp. 208–223. doi: 10.4995/ega.2023.19575.

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