Revisiting Blockchain Grammars

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The paper revisits and develops Blockchain Grammars providing various scenarios that validate the Decentralised Autonomous Organisation (DAO) Mechanism as a platform for design collaboration.

Blockchain Grammars are shape grammars Implemented on a DAO, where multiple grammarists design one or more grammars, using the underlying blockchain technology of the DAO to incentivize participants to evaluate and elaborate new ones, but also to structure the governance system of the DAO.

We have set up a (DAO) as part of the paper and we have produced various shape grammars for the design of residential towers in China. The presented grammars have been structured in order aiming to optimise density of housing, and provide functional apartment layouts.

We have validated the process of decision making via the governance system DAOs allow, and concurently present the infrastructure connection between a shape grammar system on parametric software and the smart contracts embedded on a DAO.

In terms of structure of the research, the paper presents in sequence the DAO we have set up, its governance system, the design and application of the grammars through the DAO, the voting of grammarists through the DAO to select the best grammar, and the connection between the parametric system of Rhino /Grasshopper and the DAO.

The paper considers further the implications of decentralisation of Architectural Design as a practice and discipline, with blockchain as an underlying technology.