CA2RE
Conference for Artistic and Architectural (Doctoral) Research

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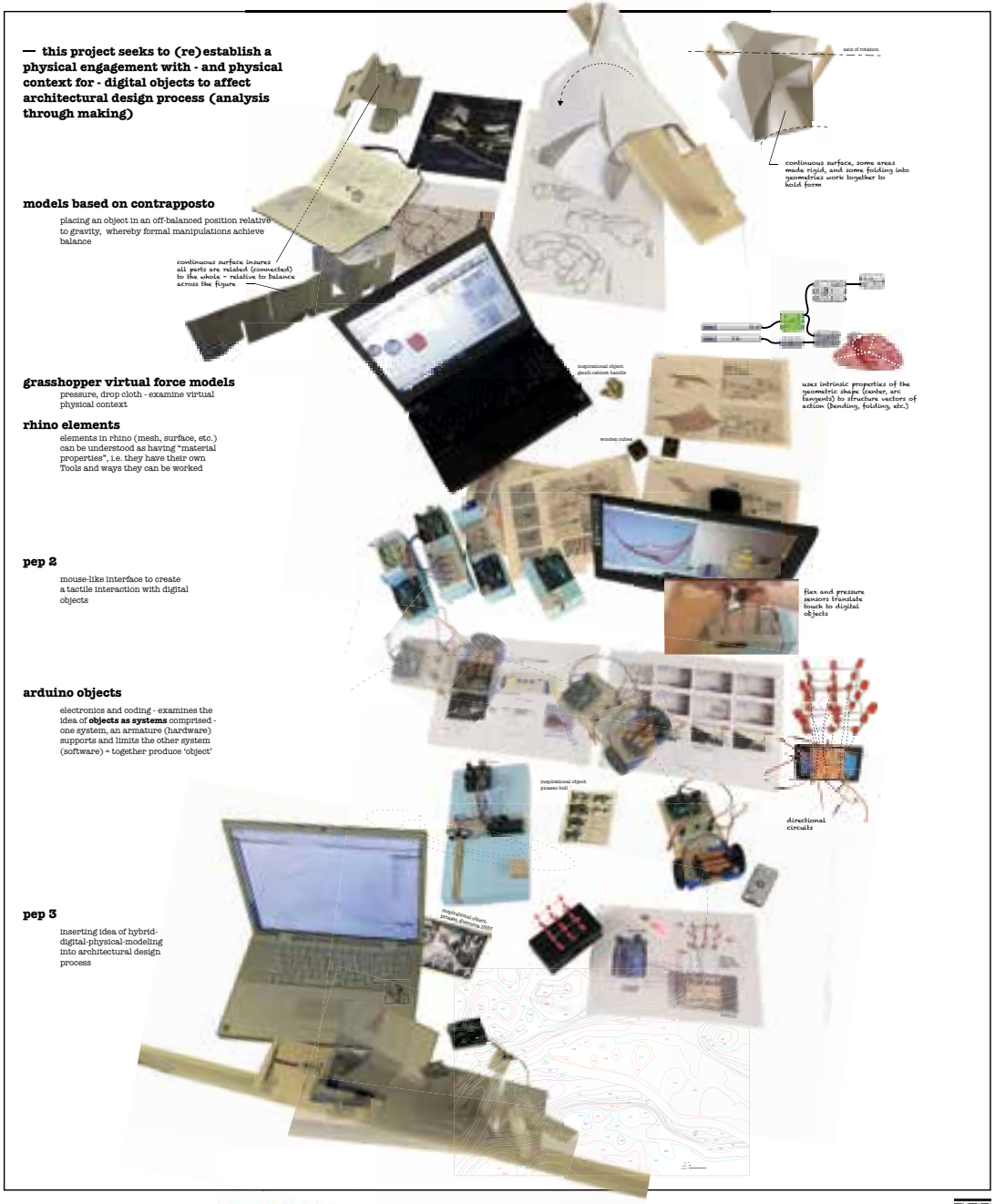
Rabbithole Research: Towards a Hybrid Modeling Technique in Architecture



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Rabbithole Research (rbt_h0l):
Towards a Hybrid Modeling Technique in Architecture

crisis:
This research responds to a perceived crisis in contemporary architecture: the removal of architectural design, specifically modeling, from a tactile process to a digital process and its separation from physical space and its forces (gravity, tension, compression, etc.). Both separations occur as a result of designing (modeling) in the neutral vacuum of digital CAD.

why crisis:
Architects think-through-making and design-process can be understood as conceptual analysis through formal manipulation. Therefore the separation of form-making from haptic workability creates a crisis in design by creating a significant rupture in the thought process of the architect as well as in the ability of form (models) to interact with the complexities of physical space.

goal:
Responding to this crisis, this research seeks to create a hybrid physical-digital modeling technique, effectively creating a tactile engagement with digital objects. Further, the development of a hybrid modeling technique can be seen as part of a post-digital era of contemporary architectural practice - having achieved a high degree of comfort and dependence on digital methods, allows the development of techniques seeking to work more intuitively within digital systems.

contrapposto:
This research is inspired by the technique of contrapposto as found in Classical Sculpture, in which a figure is intentionally placed in an unbalanced relationship with respect to gravity, producing an interlocking relationship between object and space.

hybrid-modeling experiments:
Current experiments presented focus on the development of this hybrid modeling technique: linking a physical model (integrating digital sensors and micro controllers) to a digital model, such that actions performed on the physical model direct the articulation of the digital model.
Further, using contraposto as a guide, both sides of this hybrid process, physical and digital, are placed in non-neutral relationship relative to virtual (digital) and real (physical) gravity. This ensures that in the resulting hybrid modeling method, formal manipulations respond to gravity as well as additional applied forces (tension, compression, material weight and properties) – and seeks to return to architectural modeling as a thought process as well as a formal solution, the ability to address the complexity inherent in 3D space.