

# C3D INTERACTIVE

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## → DESIGN IN THE DIGITAL AGE

Architectural design is predominantly a visually orientated discipline. The observation of expressed intention against built reality provides the basis upon which the realisation of architectural theory can be judged.

To have imagined, 20 years ago, than an architect would have the opportunity to observe a digital representation of a design proposal in context, would have pushed the limits of credibility. However, the current reality is exactly that, and more.

It is now within the technical capabilities of most architectural practices to generate photorealistic images and even animations of their design proposals throughout the design process, not merely as a development application requirement or marketing tool. Utilising software originally developed within the film industry, where speed is essential, visualisation studios, such as C3Di in Sydney, encourage all members of the building design team to assess the impact of a new development in context, internally and externally, from the earliest stages of concept design.

The progression of the three dimensional model follows several defined stages reflecting the iterative process of design, from geometric considerations into compositional concerns involving material, surface texture, colours and lighting. These stages can be summarised as follows

### Stage A: Massing Studies - Concept Design

Purpose: Investigation into context, visual impact, shadows, basic form and views.

Realisation: Rapid solid modelling enables informed design decisions to be made and approved at this very early, but crucial stage. The new development and its immediate context can be modelled very rapidly to generate simple rendered views and animations.

### Stage B: Refined massing and elevational studies

Purpose: Study of proportion and articulation, sketch elevations in context.

Realisation: The development of built form in context allows an investigation of the relationship of solid to void and the impact of sun location. Part of this work can be achieved in 'real time', taking advantage of photo manipulation software to develop 'sketch' elevations.

### Stage C: Design Development

Purpose: Material selection, glazing and framing systems, sun shading, landscaping, facility planning.

Realisation: It is at this juncture that 'real life' assessments become important, ie. true representations of light and shadow conditions, material qualities etc. Space and proportion internally can be more accurately assessed, using a combination of still images and animations.

**Top Series:** Showing facade design development by Lend Lease, over a 4 week period.

**Bottom Series:** Sequential still images taken from a 3 minute computer animation of the proposed development.



### Stage D: Detail Design

Purpose: Material and lighting studies using true photometric data, service coordination, signage / exposure, pedestrian studies.

Realisation: The input of outside consultants can begin to feed into the model more actively at this stage. Accurate services coordination information can be derived from the interlinking of 3D data for all structural, mechanical and electrical requirements. 'Real time' experimentation with alternative materials and finishes is possible, accelerating design decisions and approvals.

### Stage E: Consolidation

Purpose: Phases C & D combined and resolved to produce a complete model in preparation for production information.

Realisation: This represents the point at which all aspects of design are complete. The built form and its functionality have been sufficiently assessed through observation of the 3D model to allow an effective 'sign off' to be achieved.

### Stage F: Presentation and production information.

Purpose: Creation of base drawings, photomontaged views, shadow diagrams, animations, multimedia presentations, sample boards.

Realisation: Utilisation of the CAD model to generate a large proportion of the information required for the regulatory approvals process. Marketing imagery can additionally be produced from the same source.

At each defined stage, a 'sign off' can be achieved from all relevant parties, using the CAD model as the objective focal point. The visual portrayal of any potentially contentious areas of the design results in rapid and effective resolution of any issues.

It is the intention of interactive visualisation studios, such as C3Di to continue developing and enhancing these ideas, permitting a far more streamlined and effective design process. This will, inevitably, lead to considerable time and cost savings for all members of the design team. More importantly, in creating an environment in which architectural design can be more critically and objectively assessed, standards of design, both in terms of resolution and quality will inevitably improve.

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