



## LIGHT MODULATION

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# light modulation

Depak Kaushal

An ADBE scholarship grant-aided project between:  
BDes Hons, 3D Design, Introductory Studies Module and  
BDes Hons, Fashion & textile Design, Fundamentals of Design Practice Module

A 2-week collaborative project to explore and design with Light, as the very first project First Year students undertook.



**By this collaboration,** 3D Design hoped to enhance student-learning experience by expanding their materials vocabulary, extending to textile fabrics and associated processes. Similarly Fashion and Textile Design were attracted by Light Modulation projects 3D Design was involved in, previously. Advantages were seen in staff and student interdisciplinary teamwork.

**The Project Theme: Light:** Morphogenesis, Shape, Form, objects, Space and Structure. We know the importance of light affecting how we perceive form. We experience both natural and artificial sources, and com-

bination of both. Light was therefore the chosen theme of this project.

A flat surface reflects light, but a curled, convex /concave, wrinkled, creased surface modulates it, reflecting and bouncing with varied intensity depending upon its substance and the surface facing the light source; one would say an intelligent surface and texture. Observing by turning, revealing moments of visual effects, change and complexity with surprising and emotive visual results, like series of ripples, dynamic rhythms patterns; providing visual drama. Light Modulation' was coined as a phrase by László Moholy-Nagy at the Bauhaus School in the 1920's.





**Light Modulation Workshop:** The first week was devoted to exploring light effects and develop ideas by making simple constructs in thin white sheets of paper, card, textile fabric, yarns and wires. The focus on form and texture by employing cuts, curls, bends, tears, slots, texture, joints, folds, angulation, multiples, spiralling, honey-combs, tessellation, concertina, moulding; using and changing between opaque, translucent or transparent, shiny, dull, or textured media. Similarly for textiles: appliqué, baste, bind, bond, darn, distaff, fray, fringe, hank, hem, knit, knot, lace, net, patch, plait, pleat, ply, quilt, reel, seam, sew, stitch, weave, etc.

Students were to make models that modulate light, which may fascinate and intrigue them using their intellectual sensibilities, curiosity, dexterity and interest. They were to drive this project without predetermined thoughts, preconceptions, into the realm of playing, by manipulating paper and into the unpredictable, spontaneous, chance results, much in the way invention happens. Thus crafting scope for innovation, demanding economy of means, creating a vocabulary of forms, poetic, uplifting light-rhythm effects. Development of ideas by progressive constructions and improving the effects was desirable. Students were to observe and record results in appropriate media, drawings and photography in particular. '









De-constructed results retain object memory when flattened to become templates or patterns for reconstructing to desired scale in form of models in multi-variations of polymorphic clones of the original for eventual prototypes in real materials. Results are later translated into various human scales, small handheld to architectural. Petra Schmidt and Nicola Stallman argue that 'paper' in 2050 will be the only material available. Laser cutting was in great demand. A need for innovation in paper and textile technologies into robust fabrics and structure was apparent such as paper-like 'tyvek' or processes like vulcanised paper. Much interest was shown in honeycombs, tensile and stress-forming

directions and through the nature of material itself when fatigued.

**Student Participants: 3D Design:** Louise Archibald, Tomasz Baka, Boris Batiyevski, Jennifer Beattle, Rose Burgoyne, Ruth Cabrey, Ryan Clark, Megan Cleary, Sorcha Crilly, Declan Gallagher, Jacinta Gillespie, Peter Graham, Lee Johnston, Gareth Kelly, Ronan Lunney, Claire McCormick, Seamus McArdle, Uisneagh McCollum, Connor McDonnel, Nicola Meighan, Declan Mullan, Damien Nevin, Graeme Patterson, James Skelton, Christopher Smith, Samantha Tyler, Dean Warwick, Sheryl White, Enya Young.



**Student Participants:** Fashion and Textile Design: Naomi Curran, Ruth Dennison, Muireann Doherty, Anna ree Fox, Rachel Lynch, Katherine Mason, Kathryn Mackey, Mageen Meabh, Phillipa McAleer, Ruairi McGinn, Patricia McMullan, Amy Murray, Emma Smyth, Karen Toner, Andrea Hegarty, Jenny Milligan,

**Student evaluation:** - Students enjoyed interaction, meeting cross-disciplined students and workshops.... Learning new tools most; experiences they wouldn't have had without this project...Restricting to materials 'white' was a revelation,....Found interesting to work with just one colour.....Some wished

for more time and others liked it as it was..... Some were print-making for the first time, and found laser cutting useful..... Workshops were most popular and liked the relaxed atmosphere,..... most reported that they enjoyed the project.

#### **Bibliography:**

- **Vision in Motion** - by László Moholy - Nagy, Publisher : Paul Theobald and Company, 194, 8th printing, 1969.
- **Un/folded** - by Petra Schmidt and Nicola Stattmann, Publisher : Birkhäuser, 2009.







Staff: roles and responsibilities – • Noreen Kerr : Lecturer, Project co-ordinating. Samples discussion, Student tutorials/ critiques/ presentations, Sourcing materials, Fabric print- screen/ digital support

- Depak Kaushal: Lecturer, Collaborative Lecture, Lighting, Light Modulation inputs, Card/paper model making technology, Responsible for this booklet, Student Tutorials/ Critiques/ Seminars.
- Adrianna Ionascu: Lecturer, Student Tutorials/ Critiques/ Seminars, Collaborative Lecture input, Paper/card technology.
- Dominic Logan: Lecturer, Course Director 3D Design, Student Tutorials.
- Lucy McMullen: Lecturer, Student Tutorials/Critiques/Seminars, Sourcing appropriate materials, Digital input.
- Mo Morrow: Technician, Workshop demonstrations, Laser cut software support, Dye/ screen-print, Sourcing materials.
- Heather Shanks-Millar: Technician, Workshop demonstrations, CNC router, and Vacuum Former support.
- Text, Edit, and Photography of Modulators by Depak Kaushal. Workshop/Studio shots by Ami McAuley.

