CLAIMS :

1 An illumination panel comprising a transparent structural core having two opposing surfaces, a matrix of light releasing and distributing dots substantially covering both said opposing surfaces~~one surface~~, and a protective layer in abutting contact with ~~said~~ at least one of said opposing surfaces whereby the dots ~~act as~~are an adhesive for bonding the core to the protective layer and wherein the density and/or size of the dots increases across the panel in a direction away from a panel edge adjacent a light emitting element.

2 The illumination panel according to claim 1, wherein both surfaces of the core are provided with a matrix of dots that is ~~act as~~ an adhesive to bond both surfaces to protective layers.

3 The illumination panel according to ~~either~~ claim 1 ~~or claim 2~~, wherein an outer layer is bonded to the protective layer.

4 The illumination panel according to claim 3, wherein the outer layer is paint, ink, a transfer, ~~steel~~metal, glass, plastics, wood or wood veneer.

5 An illumination panel according to ~~any one of the preceding claims~~claim 1, wherein the transparent structural core is acrylic.

~~6 The illumination panel according to claim 5, wherein the acrylic core includes an optical brightener.~~

~~7~~6 The illumination panel according to ~~any one of the preceding claims~~claim 1, wherein the protective layer is metal, timber, plastics or glass and can be translucent or reflective.

~~8~~7 The illumination panel according to ~~any one of the preceding claims~~claim 1, wherein the matrix of dots is applied to the transparent structural core by

etching, painting, screen printing, printing or spraying, or transferred from or as part of a film.

~~9~~8 The illumination panel according to ~~any one of claims~~claim 1, ~~to 7~~ wherein the matrix of dots is provided by laser etching the surface of the core through the protection layer.

~~10 The illumination panel according to any one of claims 1 to 7, wherein the matrix of dots is provided by ultrasonically welding the surface of the core to the protective layer.~~

~~11~~9 The illumination panel according to ~~any one of claims~~claim 1 ~~to 7~~, wherein the matrix of dots is provided by induction, dielectric or microwave activation of a distributed receptor that bonds the surface of the core to the protective layer.

~~12~~10 A method of manufacturing ~~T~~the illumination panel according to ~~any one of~~ claims 1 ~~to 7~~, ~~wherein~~ including the step of curing the matrix of dots ~~is cured~~ by UV light or infra-red heating or laser activation ~~that~~ to bonds the surface of the core to the protective layer.

~~13~~11 The illumination panel according to claim ~~2~~1, wherein a reflective protective panel is bonded to one side of the core with a transparent or translucent protective layer being bonded to the other side.

~~14~~12 An illumination panel according ~~to any one of the preceding~~ claims 1, wherein a light is positioned adjacent or on at least one an edge of the panel.

~~15 The illumination panel according to claim 14, wherein lights are positioned adjacent or on opposite edges of the panel.~~

~~16~~13 The illumination panel according to ~~either~~ claim ~~14 or 15~~12, wherein the lights comprise a plurality of LEDs secured to or imbedded in one or more edges of the panel.

~~17~~14 A cabinet having walls and shelves, some of the walls or shelves comprising illumination panels according to ~~any one of~~ claims 1 ~~to 13~~ with a light source adjacent or in one edge of each panel.

~~18 The cabinet according to claim 17, wherein the cabinet is a cupboard, open display or refrigerator.~~

~~19~~15 A road sign comprising a housing having a mounting flange adapted to be secured to one edge of an illumination panel according to ~~either~~ claim ~~14 or 15~~12, the light being wired to the interior of the housing.

~~20~~16 A method of producing an illumination panel according to claim 1, the method comprising the step of placing a protective ~~panel~~ layer in abutting parallel contact with a transparent structural core and laser etching or activating a matrix of light releasing dots through the protective ~~panel~~ layer onto the surface of the core to adhere the ~~panel~~ layer to the core and providing light distribution across the transparent structural core.

~~21~~17 An illuminated solar panel comprising a transparent structural core having opposing surfaces, a matrix of dots substantially covering both said opposing surfaces ~~one surface~~ and a protective layer of reflective material in abutting contact with ~~said~~ an upper surface, said protective layer carrying a plurality of solar cells whereby the solar cells generate electricity that is passed to a battery pack or accumulator and power from the battery pack or accumulator is fed back to a light source positioned along at least one edge of the panel to allow light to be introduced and distributed by the matrix of dots and released through a diffuser on a lower surface~~from the opposite side~~ of the panel.

~~22 A splashback comprising an illumination panel according to any one of claims 14 to 16 having a reflective rear surface and a glass front.~~

18 An illumination panel according to claim 12 wherein the light releasing dots increase along the panel in density, size or combinations thereof across the panel in a direction away from the light source.

19 An illumination panel comprising a transparent structural core having two opposing surfaces, a matrix of light releasing dots substantially covering at least one of the opposing surfaces, and a protective layer in abutting contact with the at least one opposing surfaces whereby the dots are a pressure sensitive adhesive for bonding the core to the protective layer.

20 The illumination panel according to claim 1, wherein a transparent or translucent protective panel is bonded to both sides of the core.