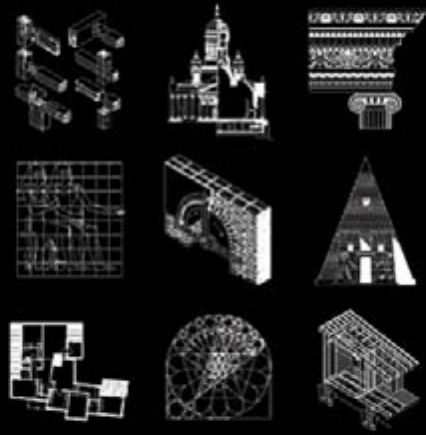


DICTIONARY OF
ARCHITECTURE AND
BUILDING CONSTRUCTION



NIKOLAS DAVES
ERKKI JOKINIEMI



Dictionary of Architecture and Building Construction

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Dictionary of Architecture and Building Construction

Nikolas Davies and Erkki Jokiniemi



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PREFACE

This book, which has been compiled by its authors over a 15 year period, is an illustrated dictionary of English language terms and concepts relating to architecture and building construction. While it is intended primarily for professional and academic use, it is also an invaluable resource for students and those otherwise interested in the subject.

The dictionary contains over 20 000 entries alphabetically arranged, each with a clear definition, synonyms and a reference to illustrations and tables, where applicable. There are over 260 illustrative plates arranged by subject, high-quality line drawings produced by the authors expressly for this book.

It encompasses all aspects of architecture and building construction from history and ornamentation to current modern technologies and professional project management, making it one of the most extensive and comprehensive books of its kind on the world market in terms of quality and content.

Content and layout

Subject areas covered by terminology can be roughly identified as follows:

- Building materials and methods: timber, metals, stone, plastics, ceramics, concrete, adhesives etc.
- Components and finishes: windows, doors, roofing, hardware
- Tools, trades and crafts, industrial production and fabrication
- Building construction and other technical aspects, building services, plumbing, acoustics
- Structural and civil engineering
- Landscape architecture
- Interior design, furnishing and decoration
- Town planning
- Traffic engineering: roads, bridges, traffic systems
- Building types (historical and contemporary)
- Conservation and restoration
- Architectural Styles
- History of architecture
- Ornamentation, art and sculpture
- Project management and professional practice: contract and site practice, regulations
- Basic concepts: units of measurement, chemical elements and compounds, perspective drawing

Part (i) is a glossary of 20 000 terms arranged in strict alphabetical order. Regardless of whether the entry is a single word, a compound word or abbreviation, it is arranged alphabetically. Hyphens, spaces or other punctuation were absent. Each entry contains the following components: a headword, possibly a synonym, a definition, references to illustrations (where applicable), related subentries (where applicable). Part (ii) comprises the illustrative material, 260 pages of 130 full-page layouts arranged in 130 spreads. There are over 4000 line images produced especially for this book. Each illustrative page spread is devoted to a single subject. The illustrations are logically arranged and located together. They are scattered randomly throughout the text, forming a 'visual index' book', an illustrative guide to the diverse subject matter. Where similar concepts on the same page we have achieved a visual definition not possible with disparate images. Where parts of buildings have been presented, we have tried to show the most familiar and key buildings as examples, drawn to the illustrative scale. Other information such as the name, architect, year of construction and location of the building has also been included for the benefit of the reader. Part (iii) includes the bibliography, table of contents and a comprehensive list of names and locations of the buildings shown in the illustrations.

Scope

The original version of this book is a bilingual work in English and Finnish offering translations and definitions in both languages. English definitions. As a starting point, this aspect has been based on drawing on a wider base of concepts, and has helped in clarifying their definitions.

Our aim in this English-language edition has been to reflect the international nature of the contemporary world-wide architectural and academic community and the modern construction industry. English is the world language of international communication. The fact that many architectural and building professionals are involved use it as a second language. This book has been designed with a clearness and simplicity with those in mind.

As with most works of this kind, a major dilemma is the fact that English is also spoken as a first language by many millions of people throughout the world, terminologic

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conventions are in many cases localized so that there may be deviations in meaning and spelling in the specific language used. While this has not proved to be an insurmountable problem, certain decisions (often based on common sense) have had to be taken. We have thus adhered to the spelling conventions outlined in the Oxford English Dictionary (whilst including North American and other spellings where applicable), and tackled punctuation problems, especially the age-old three-pronged dilemma of the hyphen versus the compound word versus the space in a logical and consistent manner. Many capital letters have been dropped to reflect the common modern usage of terms such as nylon and other products.

The amount of synonyms in this book is also testament to the sheer number of terms existing for the same or similar concept world-wide.

There are many terms from non-English speaking cultures in this book, especially the historical terminology of Ancient Greece and Rome. By convention these entries would usually be in italics to indicate their foreign origin. Because of the diverse and specialist nature of terms within this book, and also the fact that many of these terms could be regarded as specialist English-language terms, we have dispensed with this procedure, indicating their origin with the abbreviations 'Lat.' or 'Gk' instead. This frees us up to use italics for species of flora and fauna according to the Linnaeus classification, a surprising number of which make an appearance as entries.

This book is in essence descriptive rather than normative, which means that it relates to the wider use of words rather than to terms defined for use exclusively for norms, standards and committees. This makes it accessible to both the professional and layman alike, and promotes an understanding of the day-to-day aspects of buildings, as well as those relating to areas of specialist expertise. It also means that the book is unsuitable for use in cases where the strict definition of a term may be a subject of legal dispute. There are many works on the market intended expressly for this purpose.

One innovation of this book lies in the nature of its structure, that is to say, the way in which it has been compiled, collated and put together. We have attempted to produce a work of an encyclopaedic nature, an aid not only for the user who is looking for the meaning of a particular term, but also for those who know the vague area in which a term exists. Consequently many entries are referred to or listed under subject headings, called headwords; for example, different types of adhesive may be found listed under the headword 'adhesive', and so on. This concept is echoed in the illustrations, in which double-page spreads are arranged by subject, showing at a glance the comparative features of items within subject category. This duplicates the flexibility of electronic media by creating a series of links to equivalent

or sub-entries, an essential aid in identifying the different otherwise similar concepts. A thorough and logical system of referencing is essential for a book of this kind, making it a list of words or set of illustrative plates.

Our book is aimed primarily at those working as professionals in the construction industry, and at academics and architects: this includes those working in the fields of architecture and construction: architects and engineering, building and construction; and interior design consultants, builders and suppliers, product and component manufacturers, estates management professionals, town-planners, surveyors and men and those working with historical buildings, as well as academic bodies. Because of the very wide scope of written material, our selection of illustrations, our book also lends itself to use as an aid. Finally, as a definitive work on building and buildings has a household familiarity which appeals to the general public with a passing interest in DIY, building and buildings, and decoration, architectural history, etc.

A note about the authors

Nikolas Davies and Erkki Jokiniemi are practising architects in Helsinki. Together they have more than 50 years' experience in the private and public sector, and have been involved in the design of buildings of all shapes and sizes in places as diverse as Japan, Germany, Scandinavia and the UK. They teamed up whilst working in the offices of Gullichsen Kairamo Vorrin in Helsinki, and as well sharing a fondness for building soon discovered other common interests and pastimes: football, good beer and the music of a certain Mr Zim

Although for the most part the burden of work was shared, each brought his own specialist skills and interests to the area of history, especially Roman architecture, was Erkki's domain, while Nikolas brought his passion for nature to the project. It should also be mentioned that this has been in the sense an independent project, unaffiliated to any academic or industrial institution, and this has given the authors freedom to manoeuvre the book in any direction they have chosen, with full control over matters of style, content, structure and

Acknowledgements

Particular acknowledgements and thanks are given to those who have contributed time and support for the project over the years, especially our architect colleagues Timo Vormala, Kristina and Erkki Kairamo (who sadly passed away in 1994) and

thanks also to Timo Hirvonen and Vesa Huttunen for their invaluable input, and to the very many who have helped us out in some way, in particular Chris Bearman, Mikko Bonsdorff, Mikael Davies, Ville Hara, Vuokko Hosia, Timo Jokivaara, Jukka Jokilehto, Aulikki Korhonen, Sakari Laitinen, Jukka Laurila, Mikko Lindqvist, Matti Muonivaara, Meri Mäkipentti, Raili Pietilä, Anu Puustinen, Veikko Saarnio, Jyrki Sinkkilä, Matti Tapaninen, Kaisu Taskinen, Martti Tiula, Kati Winterhalten. A project of this sort is reliant on grants from private and public organizations for its survival, a debt of gratitude is therefore due to the following: the Kordelin Foundation, especially Esko Koivusalo, who was especially supportive of the project; the editor and linguist Kalevi Koukkunen who offered us insights into the mysteries of Greek and Latin; our English-language publisher The Architectural Press and its excellent staff and consultants; SAFA (the Finnish

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A special mention should be given to Nigel Davies for his early version of the English manuscript and for many discussions, and to Timo Hirvonen for reading the original script (not published in this edition).

Finally, and most important of all, thanks to our partners and all our wonderful children Eeva-Majja, Pauli, Maria, and Samuel, whose patience in having to share their household with the spectre of the dictionary project for many years has been

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Part I

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A

A0 a standard international paper size of 841 mm × 1189 mm ($33'' \times 46\frac{3}{4}''$), whose measurements are derived from its area (1 m^2) and the ratio of the lengths of its sides ($1:\sqrt{2}$); smaller derivative sizes A1–A10 are half the area of the subsequent size with the same ratio of side lengths (A1 is 841 mm × 594 mm etc.); see B0, C0. →130, →Table 6

Aaron's rod architectural ornament depicting a rod with foliage, almonds and sometimes a serpent twined around it; from biblical episodes in which Aaron placed his staff before the tabernacle, after which it bloomed, and before the Pharaoh, at which it became a serpent; see also staff of Asclepius, Mercury. →120

abaciscus Lat.; diminutive form of the word abacus; a patterned tile or rectangular area in a mosaic.

abacus 1 Lat.; a flat squared slab at the very top of a classical column, the upper part of a capital above an echinus and below an entablature. →80, →81
see *classical orders* illustration. →78, →79
see *classical capitals* illustration. →81
see *caryatid* illustration. →76
see *Romanesque and Gothic capitals* illustration. →115
2 see abaciscus.

abatis see abattis. →104

abaton Gk; the sacred area in a classical Greek temple, to which public entry was forbidden.

abattis a number of sharpened stakes embedded into the ground in front of a fortification or castle to inhibit oncoming attackers; also written as abatis; see *chevaux de frise*, *caltrap*. →104

abattoir, slaughterhouse; a building in which animals are slaughtered for the production of meat and other products.

Abbasid architecture a classical phase in Islamic architecture, the time of the caliph dynasty who ruled Damascus and Baghdad from 750 to 1258 AD, characterized by lavish palaces and great mosques.
see *Abbasid spiral minaret* illustration. →67

abbey 1 a community of monks overseen by an abbot, or of nuns by an abbess; also the main buildings of this community.
see *Carolingian abbey* illustration. →98
2 see abbey church. →98

abbey church, abbey; the church of an abbey.
see *Carolingian abbey church* illustration. →98

abbozzo in painting, the sketching out of a composition in a single colour as a guide for a final work of art.

abele see white poplar.

aberration see chromatic aberration.

Abies spp. see fir.

Abies alba, see silver fir.

Abies balsamea, see balsam fir, Canada balsam.

Abies concolor, see white fir.

Abies sibirica, see Siberian fir.

ablution ritual cleaning of the body prior to religious activity; a room in a temple associated with this. →66

ablution fountain see wash fountain.

ablution trough see washing trough.

above ground see surface.

abraded finish see ground, honed, rubbed finish.

abrading the rubbing smooth or wearing down of a surface with an abrasive.

abrasion the act of being rubbed or worn down.

abrasion resistance the resistance of a surface, coating etc. to marking or scratching.

ABS acrylonitrile butadiene styrene.

abscissa in a system of coordinates, one of the two coordinates as a distance from an axis; usually the distance of a point from the Y-axis, measured parallel to the X-axis. →127

absidiole see apsidiole. →95, →98

absinthe green a shade of greyish green named after green absinthe liqueur, flavoured by the wormwood plant, *Artemisia absintium*.

absinthe yellow a shade of greyish yellow named after yellow absinthe liqueur; see also absinthe green.

absolute humidity the moisture content of air measured as the weight of water vapour per unit volume of air; SI units are kg/m^3 .

absolute zero the lowest attainable temperature, equivalent to 0°C kelvin or -273.16°C .

absorber 1 in acoustics, any component, unit or surface treatment for absorbing sound in a space.
2 see resonator.

absorbing glass see tinted solar control glass.

absorption 1 a physical phenomenon, the soaking up of a liquid by a porous solid, a gas by a liquid, or energy in the form of sound, heat or light by matter.
2 see sound absorption.
3 see attenuation.

absorption coefficient 1 in room acoustics, a measure of the capacity of a material to absorb sound of a given frequency upon it.

2 see sound absorption coefficient

absorption unit see metric sabin.

absorptivity 1 a material property, the ratio of solid to absorb a liquid, radiation, etc.

2 thermal absorptivity.

3 see light absorptivity.

abstract art a branch of art in which the representational or freely representational form of patterns and colours.

abutment 1 the meeting place, joint, between adjacent components, parts of construction.

2 the planar joint formed by two surfaces placed adjacent to or touching one another.

3 the meeting of the upper edge of a pitched roof and a balustrade, parapet or wall surface; especially the vertical surface of a structure which rises from this.

4 the part of a loadbearing system of a bridge which loads are supported.
5 walling or support on either side of an arch to prevent it from splaying out.

6 see bridge abutment. →31, →64

7 see end abutment.

abutment flashing in roof construction, sheetmetal flashing used with pitched roof interlocking tile roofing at an abutment.

abutting tenon joint, butt tenon joint in which the grain ends of two members meet in a common mortise from opposite sides of each other. →5

abyss see fess point. →124

AC see alternating current.

acacia [*Acacia spp.*] a genus of bushy trees from warm climates.

Acacia melanoxylon, see Australian blackwood.

academic relating to higher education or to a school of art which follows the formal conventions of art.

academy a place of higher education, a scientific or cultural society or institution.

acanthus Lat.; carved and decorated capital found especially adorning classical architecture, based on stylized leaves of the acanthus plant, Bear's breech.

4 Accadian period

[*Acanthus molla*, *Acanthus spinosa*]; *akanthos* in Greek. →81, →82, →121

Accadian period see Akkadian period.

accelerated curing see heat treatment.

accelerated set in concreteness, an increase in the rate of stiffening during the setting of concrete.

accelerating admixture 1 see set accelerating admixture.

2 see strength accelerating admixture.

acceleration the progressive increase in velocity of a moving body, in units of m/s².

acceleration lane see merging lane.

accelerator 1 see set accelerating admixture.

2 see strength accelerating admixture.

accent lighting interior lighting designed to illuminate or accentuate features in a room, such as artwork, architectural details and furnishings.

acceptance in project administration, the agreeing by a client to a contractor's tender bid thereby creating a binding contract.

accepted risk, excepted risk; in project administration, known risks in construction such as uncertain ground conditions etc., referred to in the building contract, for which the client accepts liability.

acceptor a metal or extruded plastics product attached at the edge of a wall opening, to which a door or window frame can be easily attached.

access, 1 passage; internal or external circulation space leading to a building, opening or technical installation, or used as a route.

2 see entry.

3 see site access.

4 see vehicular access.

5 in computing, the means of getting to and handling information, often involving the use of codewords.

access balcony, walkway; a long approach balcony or external corridor providing access to the front doors of flats or other units of accommodation in an apartment block.

see *balcony-access flats* in residential building illustration. →61

access barrier see vehicular barrier.

access bridge see walkway.

access control any of a number of security systems using locks, surveillance equipment and card readers within buildings or restricted areas to allow the circulation of authorized persons but inhibit the passage of intruders.

access cover a covering hatch, plate or construction attached over an access opening in a drainage pipe, duct or vessel.

access door, access window, trapdoor; a removable panel in formwork which allows for internal inspection, cleaning etc.

access floor, 1 cavity floor, raised floor; flooring supported above a main floor structure to allow for the passage of electric and computer cables, ducts and other services beneath.

see *access floor* illustration. →44

2 raised access floor, see platform floor. →44

access gallery see access balcony.

see *gallery-access flats* in residential building illustration. →61

access gully a drainage gully with a rodding eye for cleaning.

accessibility 1 in town and traffic planning, a measure of how easily and by which mode of transport a particular area can be reached.

2 the ability of a component or construction to be easily accessed for maintenance, repair, replacement etc.

access ladder 1 a ladder attached to the external wall of a building to provide maintenance access to the roof; also called a roof access ladder.

2 see roof ladder.

3 see chimney ladder. →54

4 loft ladder, see disappearing stair.

access order in town planning and land management, an order issued by a local planning authority to ensure legal public access to private land for throughfare, recreation etc.

accessory any small components used to affix or supplement a construction, or fixings and trim supplied with a product, component or system.

access pipe a drainage pipe with an opening for cleaning.

access platform see gantry. →54, →61

access stair, service stair; a secondary stairway providing access to plant or other installations.

access time, search time; in computing, the time taken for a computer or search engine to find required data.

access window see access door.

accidental air see entrapped air.

accidental colours see afterimage.

accidental point in perspective drawing, any additional vanishing points not on the axes of the main points.

accommodation road a road through private land which another person or persons have the legal right to use, usually as a route to their own land, and often in return for land concessions.

accordion door a folding door with hinged vertical panels which fold when the door is open. →50

account 1 a written record showing transactions as tables of figures.

2 an arrangement with a bank or other establishment whereby money or other services are provided.

3 a personal arrangement with a bank or other commercial facility for the provision of services etc.

accountancy, accounting, bookkeeping, the upkeep of the financial records of a business organization.

accountants, bookkeepers; professional persons who look after the books and accounts of a business.

accounting see accountancy.

accounting period a set period for which revenues and expenditures for a business are calculated.

acoupled in classical architecture, columns or pilasters arranged in pairs and joined together.

Accrington brick a hard, dark red brick of shale from East Lancashire in England, used for engineering and industrial purposes.

accuracy an expression of the range of error in measurement, manufacture etc.

Acer spp. see maple.

Acer nigrum, see black maple, hard maple.

Acer pseudoplatanus, see sycamore.

Acer rubrum, see red maple, soft maple.

Acer saccharinum, see silver maple, black maple.

Acer saccharum, see hard maple, sugar maple.

acetal see polyoxymethylene.

acetate a salt or ester of acetic acid. Includes plastic household products, as cellulose acetate, record discs and clear plastic sheeting. Other compounds included as separate entries below.

amyl acetate.

cellulose acetate, CA.

lead acetate.

polyacetate, see polyoxymethylene.

polyvinyl acetate, PVA.

acetone a colourless, strong-smelling, highly flammable liquid distilled from organic materials and used as a solvent.

acetylene black a form of the pigment carbon black made by cracking acetylene gas under pressure.

Achaean art, Achaian art; art produced by the Dorians, produced in Thessaly, and associated with the Achaean peoples from 2000 to 1000 BC.

Achaemenian art art with Assyrian influences predating the age of Alexander the Great, produced in Persia by the Achaemenid peoples from 559 to 330 BC.

Achaian art see Achaean art.

acheiropoeitos a sacred image in Byzantine art, not created (or thought not to have been created) by man; akheiropeitos in Greek.

achromatic see colourless.

achromatic colour in colour science, a mixture of varying degrees of solely black and white.

acid a sour, alkali-neutralizing chemical substance capable of corroding metals.

acid cleaning a cleaning treatment for metals using sulphuric, phosphoric or citric acids in combination with surfactants to remove contaminants, rust and scale from the surface.

acid-curing lacquer a two-pack lacquer used on interior timber surfaces, based on urea or melamine formaldehyde resins; see next entry.

acid-curing paint a two-pack paint for interior use based on urea or melamine formaldehyde resins, with good surface hardness and long pot-life and which hardens by blending with an acid.

acid dew point the temperature at which combustion gases rich in sulphur and chlorine condense as liquid acid.

acidic rock, acid rock; types of igneous rock whose silica content is greater than 66%.

acidity, degree of acidity; the acid level of a soil, solution etc., as measured by obtaining its pH level.

acid rock see acidic rock.

acid wash a cleaning treatment for concrete and stonework by sponging with a solution of acid salts.

ACM see polyacrylate rubber.

acorn an ovoid finial resembling the fruiting body of an oak tree; used as an ornamental terminating element for a balustrade or pier etc., often unembellished; see pineapple, pine cone. →121

acorn nut see cap nut. →37

acoustic, acoustical; dealing with or based on sound, or the treatment of sound.

acoustic absorber see absorber, muffler.

acoustic absorption see sound absorption.

acoustic absorption coefficient see sound absorption coefficient.

acoustical see acoustic.

acoustical analysis a study of the sound insulating, absorbing and reflecting characteristics of a building or space, or a project at design stage.

acoustical design the design of a building or space with respect to absorption, insulation or enhancement of sound.

acoustical glass see sound control glass.

acoustical treatment see acoustic treatment.

acoustic attenuation see attenuation.

acoustic attenuator see muffler.

acoustic board softboard whose surface is shaped, perforated or machined to improve its properties of sound absorption.

acoustic ceiling a ceiling designed to provide sound insulation or absorption for a space.

acoustic consultant see acoustician.

acoustic control glass see sound control glass.

acoustic engineer see acoustician.

acoustic glass see sound control glass.

acoustician, acoustic engineer; an expert who provides professional consultancy on acoustic matters.

acoustic insulation see sound insulation.

see *soundproofing* in floors and flooring illustration. →44

acoustic intensity see sound intensity.

acoustic intensity level see sound intensity level.

acoustic isolation see sound insulation.

acoustic level see sound level.

acoustic level meter see sound level meter.

acoustic mortar see acoustic plaster.

acoustic panel a panel designed to absorb sound and thus regulate the acoustic quality of a space.

acoustic plaster plaster containing lightweight or other porous aggregates, used for its acoustic properties, especially sound absorption; also called acoustic mortar.

acoustic plasterwork plasterwork containing aggregate which has acoustic properties; finished work in acoustic plaster.

acoustic power see sound power.

acoustic power level see sound power level.

acoustic pressure see sound pressure.

acoustic pressure level see sound pressure level.

acoustic propagation see sound propagation.

acoustics 1 the study of sound and hearing.

2 the properties of a room pertaining to sound.

3 see acoustical treatment.

4 see room acoustics.

acoustic spectrum see audio spectrum.

acoustic treatment, acoustics; physical or spatial measures, materials or components added to affect the acoustic perception and performance in a space with respect to sound insulation, absorption and reflection.

acre an imperial unit of area equal to 4047 m².

acrolith in classical Greek architecture, a statue whose head, hands and feet are carved from a timber torso.

acropodium Lat.; in classical architecture, a pedestal or plinth for a statue; akropodion in Greek.

acropolis in classical Greek architecture, a stronghold or fortress constructed on a high ground than surrounding urban fabric.

across the grain perpendicular to the natural direction of the grain in timber.

acroter see acroterion. →78

acroterion, acroter; in classical architecture, a pedestal for statues, set at the entrance of a temple; also often the statues or figures themselves; plural acroteria; Latin form of the Greek is akroterion. →78

see *acroterion* in classical temple illustration.

acroterium Latin form of acroterion.

acrylate adhesive acrylic-based adhesive used for soft plastic seams and tapes.

acrylic a synthetic polymer resin used in paints, adhesives and textiles.

acrylic baking enamel see acrylic enamel.

acrylic cellular sheet, cellular acrylic sheet, cellular sheet glazing or cladding, a sheet of cellular sheet glazing or cladding made from transparent acrylic resin.

acrylic coating see acrylic finish.

acrylic finish, acrylic coating; any surface treatment or coating, such as tiling, boarding or cladding whose finish is acrylic.

acrylic flooring compound a hardening compound for sports halls, corridors etc. laid on concrete floor slabs as a mixture of liquid acrylic resin, hardener and fine aggregate.

acrylic paint emulsion paint based on acrylic resin of acrylic in water.

acrylic polymer flooring see acrylic flooring compound.

acrylic powder coating, stone-effect acrylic powder coating, a hardwearing decorative coating made from acrylic resin, applied to metal components in powder and baked on.

acrylic primer acrylic paint used as a base or undercoat.

acrylic rubber see polyacrylate rubber.

acrylic sealant an acrylic-based adhesive used for dry applications.

acrylic sheet strong translucent or opaque lightweight sheet of polymethyl methacrylate.

6 acrylic stoving enamel

plastics used for glazing and cladding; marketed as Perspex and Plexiglas.

acrylic stoving enamel, acrylic baking enamel; a hardwearing paint coating used in the automotive industry, based on acrylic resin applied to metal surfaces as a liquid spray and baked on.

acrylonitrile butadiene styrene, ABS; a tough, strong thermoplastic used for waste pipes, garage doors, small vehicles and taxi-cab roofs.

actinium a radioactive, silver-white, metallic chemical element, **Ac**, which glows in the dark.

action area in town planning, a particular area designated by a planning authority to merit special change such as development, redevelopment or improvement.

activated carbon, activated charcoal; granular or powdered forms of porous carbon or charcoal processed to remove tarry components, used for adsorbing gases and odours from air, or dissolving contaminants from liquid solutions.

activated charcoal see activated carbon.

activated sludge organic mass produced from sewage aerated by blowing air through it, used in the treatment of waste water for the digestion of incoming sewage.

activated-sludge process the biological treatment of waste water using organisms in aerated sludge to digest the solid matter from incoming sewage.

active earth pressure the pressure of earth acting against the side of a wall and against which it provides resistance.

active fire protection mechanical or electronic control systems such as sprinklers, fire alarms etc. for indicating the presence of or extinguishing hazardous fires in buildings.

active leaf the door leaf in a double door usually used for throughfare. →50

activity analysis a study of the overall patterns of behaviour and activities of a particular user group such as inhabitants, consumers or occupants, used as a basis for the formulation of a design brief or town plan.

activity space, hobby room, recreation room; a space in a residential building or dwelling primarily used for leisure activities and hobbies.

act of God see force majeure.

actual size the size of an object as obtained by measurement; see also nominal dimension.

acute angle an angle of less than 90°.

acute arch see lancet arch. →24

Adam style a style in interior decoration in England from 1760 to 1770 named after the Adam brothers,

John, Robert and James, and characterized by classical motifs and bold colours.

adapter see adaptor.

adaptive use in town planning, the change in use or function of a building from that for which it was originally designed.

adaptor, adapter; **1** a device for converting mains current to that suitable for operating electronic devices.

2 see plug adaptor.

3 see flue adaptor. →58

addendum a separate explanatory statement intended to clarify, amend or supplement a document, drawing etc.

addition 1 the process of adding numbers together to produce a sum.

2 an extension to an existing building.

additional work see extra work.

addition polymerization, polyaddition; the chemical joining together of two or more molecules of a compound such that the molecular weight of the polymer thus formed is a multiple of that of the original compound; the general form of polymerization.

additive a substance added to a material or process to modify its chemical or physical properties.

additive mixture in colour science, lighter colours formed when beams of coloured light are combined, thus adding spectral components together.

additive order the building of Romanesque and early Gothic churches with additional transepts, chapels and chancels. →97

addorsed a description of ornament or sculptured figures standing or situated back to back; see also affronted. →122

addressable system, intelligent fire alarm; an electronic installation for indicating the location and severity of an outbreak of hazardous fire in a building.

adhering knot see tight knot.

adhesion, bond; the action of sticking together; the strength of the attractive or fastening force evolved between a surface material or coating and its backing, or between two components which have been glued or bonded together.

adhesive a sticky solid or liquid bonding substance used for the firm sticking, surface joining and holding together of materials and components; the words adhesive and glue are generally synonymous, although adhesive is often applied to more technologically advanced

products, while glues are often of animal origin; a cement is an inorganic material which sets in hard, brittle form; a mortar is a mixture of cement and sand, which sets included as separate entries below.

aerosol glue, see spray adhesive.

albumen glue.

anaerobic adhesive.

animal glue.

aqueous adhesive, see water-borne adhesive.

bituminous adhesive.

bone glue.

brushing adhesive.

casein glue.

cassava.

cellulose adhesive.

cold curing adhesive.

cold glue, see cold setting adhesive.

cold setting adhesive.

collagen glue, see animal glue.

contact adhesive.

cyanoacrylate adhesive.

elastomeric adhesive.

emulsion glue, emulsion adhesive.

epoxide resin adhesive, see epoxy resin adhesive.

epoxy adhesive, see epoxy resin adhesive.

epoxy glue, see epoxy resin adhesive.

epoxy resin adhesive.

film adhesive, see film glue.

film glue.

fish glue.

gluten glue.

gun applied adhesive.

gunnable adhesive, see gun applied adhesive.

hide glue.

hot-melt adhesive, see thermoplastic adhesive.

hot-melt glue, see thermoplastic adhesive.

hot setting adhesive, see thermosetting adhesive.

hot setting glue, see thermosetting adhesive.

interior adhesive.

isinglass, see fish glue.

melamine formaldehyde glue.

moisture curing adhesive.

moisture resistant adhesive.

one-way stick adhesive.

phenol formaldehyde glue.

polymer adhesive, see polymerizing adhesive.

polymer glue, see polymerizing adhesive.

polymerizing adhesive.

polyvinyl acetate glue.

protein glue.

PVA glue, polyvinyl acetate glue.
 resin adhesive, see synthetic resin adhesives.
 resin glue.
 resorcinol formaldehyde glue.
 rubber adhesive, see elastomeric adhesive.
 rubber glue, see elastomeric adhesive.
 rubber solution.
 Scotch glue.
 single spread adhesive, see one-way stick adhesive.
 solvent adhesive.
 solvent-based adhesive, see solvent-borne adhesive.
 Solvent-borne adhesive.
 soya glue.
 spray adhesive.
 starch adhesive.
 structural adhesive.
 super glue, see cyanoacrylate adhesive.
 synthetic resin adhesive.
 synthetic rubber glue, see elastomeric adhesive.
 thermoplastic adhesive.
 thermoplastic glue, see thermoplastic adhesive.
 thermosetting adhesive.
 two pack adhesive, two component adhesive, two part adhesive.
 two-way stick adhesive.
 urea formaldehyde glue.
 vegetable glue.
 water-borne adhesive.
 waterproof glue, see water-resistant adhesive.
 waterproof adhesive, see water-resistant adhesive.
 water-resistant adhesive.
 water-based adhesive, see water-borne adhesive.
 wood adhesive.
 wood glue, see wood adhesive.

adhesive failure, bond failure; the failure of a glued joint due to a reduction in bonding between a glue or binder and glued parts.

adhesiveness the ability of a glue to provide a bond between two surfaces.

adhesive tape paper or plastics tape with adhesive on one or both sides and manufactured in rolls; used for fastening, fixing, masking, insulating etc.

adhocism a term coined by the architect Charles Jencks to describe modern eclectic styles of architecture which contain random references and historical motifs.

adiabatic referring to a thermodynamics process which occurs without the transfer of heat.

adit, aditus (Lat.); a passage or entranceway, especially one to a Roman building. →89, →90

aditus Latin form of adit. →89, →90

adjacent building a building on a site next to that of a proposed or existing building, such that there is space between the two.

adjoining building a building on a site next to that of a proposed or existing building, such that they are physically joined to one another.

adjustable the ability of a device, tool, machine, furnishing etc. to be able to be adjusted to suit the needs of the user or a process.

adjustable item an item in a bill of quantities for which provided information is insufficient and whose quantities are subject to reassessment.

adjustable prop see telescopic prop. →30

adjustable set square in technical drawing, a set square in which the angle of the hypotenuse can be adjusted by a sliding mechanism. →130

adjustable spanner a spanner with screw-adjustable jaws to suit a range of widths.

adjustable wrench see adjustable spanner.

adjustment see formula price adjustment.

adjustment screw in field surveying, a screw on an optical levelling instrument for making fine adjustments; a similar component on other devices.

administration, management; the overseeing, planning and direction of affairs and personnel in an organization.

administrative building a building connected to an institution, public building or industrial complex, from which it is governed.

admiralty brass an alloy of copper and zinc with additional tin to improve corrosion resistance and increase strength.

admixture a material added in small quantities to affect the properties of a concrete or mortar mix; types of admixture included as separate entries are listed below; see also agent.

accelerating admixture, see set accelerating admixture, strength accelerating admixture.

air-detraining admixture.

air-entraining admixture.

anti-foaming admixture.

antifreezing admixture.

bonding admixture.

colouring admixture.

corrosion inhibiting admixture.

expansion producing admixture.

flocculating admixture.

foam forming admixture.

fungicidal admixture.

gas forming admixture.

high range water-reducing admixture.

plasticizing admixture.

mortar admixture.

permeability-reducing admixture, plasticizing admixture.

set accelerating admixture.

set retarding admixture.

strength accelerating admixture.

superplasticizing admixture.

thickening admixture.

water-reducing admixture.

water-resisting admixture.

waterproofing admixture, see waterproofing admixture.

adobe 1 clay and unfired brick baked in the sun; see mud brick.
 2 forms of construction making use of adobe.

ADP acronym for automated data processing.

adsorption 1 the intake of a liquid or gas by a solid.
 2 a water purification treatment in which water is percolated through solid granules which impurities adhere to.

adularia a transparent variety of orthoclase or potash feldspar found in the Alps; see moonstone.

aduton Greek form of adytum. →85

advance, advance payment, payment made prior to receipt of services, such as that paid by a client before the contract is signed but before work begins.

advanced decay, typical decay of wood in contact with the ground; decay in wood indicated by softening of structural strength.

advanced work an outer defensive work close enough to main fortifications to be able to be fired from; an outwork or first line of defence; called a forework. →104
 see *fortification* illustration. →104

advance payment see advance.

advent cross see tau cross. →117

adventure playground an area of ground, often with climbing equipment, for children to play on.

advocacy planning in town planning, the preparation of plans or planning on behalf of an organization, interested in the welfare of the community rather than by an official authority.

adyton see adytum. →85

adytum, sanctuary; Lat.; in classical architecture, the most sacred inner chamber of a temple.

to which priests only were allowed access; the Greek form of the word is *aduton* or *adyton*. see *adytum* in classical peristyle temple illustration. →85

adz see *adze*.

adze, *adz*; an axe-like hand tool for the rough shaping and smoothing of wood; it has a sharp curved steel blade whose cutting edge is perpendicular to the handle.

adze eye hammer a hammer whose head is fixed to the shaft by means of a sleeve at the base of the head.

aedicula Latin form of *aedicule*. →112

aedicule, *aedicula* (Lat.); in classical architecture, a niche, recess or pedimented structure, especially one housing a statue, surrounded by columns, pilasters or colonnettes. →112

Aegean art art from the bronze-age cultures of the Aegean Sea coasts from 2600 to 1500 BC, variously known as Minoan (Crete), Helladic (mainland) and Cycladic (islands) art.

see *Asian and Mediterranean columns and capitals* illustration. →69

aeolian deposit, wind deposit; any soil which has been deposited by the action of the wind.

Aeolic capital in classical architecture, a forerunner of the Ionic capital with a rectangular upper section supported by volutes divided by palmette decoration. →69

aerarium Lat.; in classical Roman architecture, the public treasury of a community, originally the treasury of the temple of Saturn.

aerated concrete, cellular concrete, porous concrete; various types of lightweight concrete for in-situ work and precast products with good thermal insulation, produced by the introduction of bubbles of gas into the mix, either by a foaming agent, by adding foam, by mechanical foaming or by adding a chemical which reacts with the concrete to produce gas bubbles; see also gas concrete, foamed concrete.

aeration the introduction of air into a material such as soil, water, concrete etc.; especially the introduction of oxygen into raw sewage to reduce the quantity of other dissolved gases.

aeration tank, oxidation tank; a tank in a waste water treatment plant in which raw sewage is treated by biological action initiated by the introduction of air.

aerator see tap aerator.

aerial, 1 antenna, (pl. *antennae*); a telecommunications receiver for airborne electromagnetic transmissions.

2 see satellite link aerial.

aerial amplifier an electronic device for increasing the strength of signals picked up by an antenna or aerial.

aerial perspective, 1 a perspective drawing in which the object or scene is viewed as from the air; usually a panoramic view.

2 atmospheric projection; a method of rendering a drawing to achieve the illusion of depth by drawing objects in the background less distinctly.

aerial photograph a photograph of a site, building or geographical feature taken from the air.

aerial ropeway a transportation system using ropes supported between towers to convey goods.

aerial survey the photographing of areas of land and coastline from the air for photogrammetrical map-making.

aerial view a presentation drawing, graphic visualization or photograph in which the subject or scene is viewed from above.

aerodrome see *airfield*.

aerodynamics a science which deals with gases in motion.

aerosol a suspension of fine particles of solid or liquid in a gas, usually air.

aerosol glue see *spray adhesive*.

aerosol spraying the spraying of a paint, varnish, glue or other liquid from a pressurized airtight container to form an aerosol; used for applying even coatings.

aerostatics a science which deals with the equilibrium and pressure of gases.

Aesculapian column see *serpent column*. →69

Aesculapius see *staff of Asclepius*. →120

Aesculus spp. see *horse chestnut*.

Aesculus hippocastanum, see *European horse chestnut*.

aesthete 1 a follower of the Aesthetic Movement in the 1800s.

2 any person who lives with a sense of artistic sensibility.

aesthetic pertaining to the visual nature of an object or work of art; visually and sensually pleasing, beautiful.

aesthetic control in town planning, the control of development with respect to its external appearance, massing, materials etc.

Aestheticism a theory of art developed by Immanuel Kant in the 1700s, based on the premise that art can be judged only within the bounds of an aesthetic philosophy.

Aesthetic Movement an artistic movement in England from the late 1800s promoting the idea of art for art's sake.

aesthetics the philosophy of beauty of an object with regard to its visual impact.

aetoma see *aetos*. →86

aetos, *aetoma*; Gk; in classical Greek architecture, the tympanum of a pediment, usually decorated with figures. →86

afara see *limba*.

afforestation, *forestation*; in landscape architecture, forestry, the planting of open land for recreation areas and derelict industrial sites to form woodland or forest.

affronted a description of ornamented figures depicted facing towards each other, situated face to face; see also *addorsed*.

A-frame a simple triangulated frame structure with leaning beams meeting at a ridge, used for a stiffening collar.

African cherry see *makore*.

African ebony [*Diospyros crassifolia piscatoria*] a tropical African hardwood, especially heavy, dark timber.

African mahogany, *khaya*; [*Khaya grandis* spp.] a group of West African hardwoods, relatively strong and durable, used for interior joinery and boat-building.

africanum see *opus africanum*. →83

African walnut, *alona*, Congo walnut, [*Alseodaphnophloeum trichilioides*, *Lovoa klaineana*] a tropical African hardwood with plain golden brown wood, used for furniture, panelling and veneering.

African whitewood see *obeche*.

afromosia, *kokrodua*; [*Pericopsis africana*] African hardwood with rich yellow wood, used for internal and external joinery and as a substitute for teak.

afterimage, *accidental colour*; a result of eye physiology, an image which appears as complementary colours on a neutral or white background when the gaze is removed from a stimulus image.

afzelia, *doussie*; [*Afzelia* spp.] a group of African hardwoods with durable reddish-brown wood, used for interior and external joinery.

against the grain in the milling of wood, the direction of cutting in which the wood fibres of the piece is sloping upwards and against the cutting edge.

agalma Gk; a work of art, votive offering, dedicated to a deity in a classical temple.

→84, →86

agate 1 a microcrystalline variety of the mineral chalcedony, of variable colour and pattern; used in technology, as gemstones and for decoration.

2 henna; a shade of reddish brown resembling the colour of the above, or the pigment prepared from the leaves of the tropical plant henna, *Lawsonia inermis*.

Agave sisalana see sisal.

agent 1 a material or substance used for its effect on another material or process; in concreting it is often called an admixture; types of agent included as separate entries are listed below.

air-detraining agent, see air-detraining admixture.

air-entraining agent, see air-entraining admixture.

alkaline cleaning agent.

binding agent, see binder.

bonding agent.

cleaning agent.

colouring agent, see colourant.

emulsifying agent, see emulsifier.

flocculating agent, see flocculating admixture.

foaming agent.

polishing agent, see polish.

release agent.

retarding agent, see retarder.

surface-acting agent.

suspension agent, see thickening admixture.

thickening agent, see thickening admixture.

2 one employed to organize matters on behalf of another.

see site agent.

agger Lat.; a Roman earthwork or rampart formed by heaping soil and other material from ditch excavation; the filling material of earth, sand, stone and wood therein. →104

agglomerated cork a light, porous, buoyant material manufactured by reconstituting granulated cork to form slabs and other products.

agglomeration the collecting together of very small particles in a suspension to form larger lumps which settle to the bottom.

aggregate inert granular material such as sand, gravel, crushed rock and clinker used as a main solid constituent in concrete, plaster, tarmacadam and asphalt; types of aggregate listed as separate entries are listed below.

angular aggregate.

blended aggregate.

coarse aggregate.

continuously graded aggregate.

crushed aggregate.

crusher-run aggregate.

cubical aggregate.

elongated aggregate.

expanded aggregate. →49

expanded clay aggregate, expanded shale aggregate, see expanded aggregate. →49

fine aggregate.

flaky aggregate.

flaky and elongated aggregate.

gap graded aggregate.

graded aggregate.

light expanded clay aggregate, see expanded aggregate.

lightweight aggregate.

manufactured aggregate.

natural aggregate.

rounded aggregate.

single sized aggregate.

sintered aggregate.

wood particle aggregate.

aggregate block same as aggregate concrete block. →30

aggregate/cement ratio the ratio of the mass of aggregate to that of cement in concrete or mortar.

aggregate concrete block see concrete block, usually refers to a lightweight aggregate concrete block. →30

aggregate exposure a finish treatment for a concrete surface in which water, or in some cases acid, is sprayed to wash away the surface layer of cement, revealing the coarse aggregate; the result is called exposed aggregate concrete.

aggregate impact value a measure of the resistance of aggregates used in road construction to fracture under impact, governed by the amount of debris resulting from repeated compactive testing.

aggressive water, corrosive water; piped supply water with dissolved carbon dioxide, acids or minerals which pose a corrosive hazard to copper pipework and equipment.

agitating lorry see agitating vehicle.

agitating vehicle, agitating lorry, truck mixer; a vehicle which both transports and mixes concrete.

Agnus Dei Latin for 'Lamb of God'; in religious symbolism, a representation of Christ as a lamb with a cross and chalice. →119

agora Gk; in classical architecture, a market or meeting place in a Greek city, the hub of public life where the most important public buildings were situated; cf. forum. →94

agreement 1 a binding decision made between two parties, a contract.

2 see articles of agreement.

agricultural drain see field drain.

agricultural land, farmland; in law any land used or designated for agriculture.

agricultural unit an area of agricultural land with associated buildings farmed as a unit.

agriculture see farming.

Agromyza spp. see pith flecks.

A-hinge a hinge whose leaves are triangular, forming a lozenge shape when closed; used for hanging wide or heavy doors.

AIA the American Institute of Architects; the national association of architects in the United States.

aid any substance added to a product to improve its function more efficiently rather than to alter its properties of the resulting product.

aille a wing or flank of a fortification.

aileron in church architecture, a vertical edge closing the end of a gable. →113

aims of the competition the purposes for which entrants to an architectural competition are to find suitable solutions.

air admittance valve a valve in a duct which allows air to enter to permit the entrance of ventilation air but prevents air from escaping to even out pressure differences.

airborne sound sound conveyed through the air.

airborne sound transmission score a measure of the sound transmitted through the air rather than the fabric of a partition.

air brick, ventilating brick; a brick with round perforations from stretchers to face, used to reduce the weight of a wall and for ventilating cavity spaces etc. →16

airbrushing a graphic technique in which a surface is sprayed with a special nozzle using compressed air.

air-change rate, ventilation rate; the number of times per hour that the air in a room is completely renewed. It is expressed as the hours of air provided to a space divided by the volume of the space.

air conditioning 1 a mechanical process providing warmed, cooled, cleaned and dehumidified air into the habitable space.

2 see central air conditioning.

air-conditioning duct an air duct forming part of an air-conditioning installation.

see *air-conditioning duct* in illustration. →60

10 air-conditioning unit

air-conditioning unit, air-handling unit; a piece of mechanical services equipment for treating and conveying clean air into a space or building.

air content 1 the total amount of air in a substance, expressed as a percentage by volume.

2 in concreting, the total volume of air voids per unit volume in vibrated concrete, expressed as a percentage.

air-control tower see control tower.

air current the directional movement of heating and ventilation air within a space by convection.

air-detraining admixture, air-detraining agent; in concreting, an admixture included in the concrete mix to inhibit the inclusion of air.

air-detraining agent see air-detraining admixture.

air diffuser in air conditioning, an inlet grille which gives direction to supply air.

air diffusion see diffusion.

air distribution in air conditioning, the pumping of air via ducting to points of supply.

air-distribution system in air conditioning, an installation consisting of ducting and pumping plant for distributing treated air to outlets.

air dried, air seasoned; timber having reached equilibrium with outdoor atmospheric humidity, specified as 12% moisture content.

air duct 1 in air conditioning and mechanical ventilation, a long closed pipe or vessel of sheetmetal for conveying air to its points of use.

see *air duct* in office building illustration. —60

2 see ventilation duct. —60

air-entrained concrete a form of concrete with increased workability and resistance to weathering and frost, into which minute bubbles of air have been introduced using an air-entraining admixture.

air-entraining admixture, air-entraining agent; in concreting, an admixture included in the concrete mix to promote the inclusion of air.

air-entraining agent see air-entraining admixture.

air entrainment, entraining; the deliberate incorporation of tiny air bubbles into concrete to improve its workability and frost resistance.

airfield, aerodrome; a non-commercial area of land and associated buildings to accommodate the taking off, landing and administration of aircraft.

air filter in air conditioning, a porous barrier to collect impurities and particles from intake air.

air flow the directional movement of ventilation air within ductwork, usually induced by a fan.

air gap 1 in piped water supply, the vertical height between the outlet of a tap and rim of a sink, or

ballvalve and overflow, a measure of the precaution against backsiphonage.

2 a narrow space between adjacent building components or materials allowed for in construction for the circulation of ventilating air, or for insulating purposes. —8

air-gap membrane a resilient membrane of high density polyethylene or similar polymer preformed with a grid of dimples or raised pattern, laid against foundation walls as tanking, also providing a small ventilating gap to allow moisture a passage out of the substructure; also called a cavity drainage membrane or tanking membrane. —29, —57, —59

air-handling luminaire a light fitting so designed that exhaust air from an air-conditioning or ventilation system is extracted through it.

air-handling plant room see ventilation plant room.

air-handling unit 1 see air-conditioning unit.

2 see fan unit.

airing cupboard, 1 wardrobe; a small ventilated room for the storage of clothes and household fabrics.

2 see drying cupboard.

air inlet 1 see fresh-air inlet. —58

2 see fresh-air vent. —58

air intake see return-air terminal unit.

air jet, airstream; the directed flow of ventilation and air-conditioning air produced by a supply air inlet.

airless spraying, hydraulic spraying; an industrial painting process employing a high pressure pistol with a fine nozzle to apply even coatings to building components and furniture.

air lock 1 an intermediate enclosed space or lobby between spaces with different environments or air conditions, affording access from one space to the other with minimal movement of air between the two.

2 an unwanted bubble of air trapped in pipework, inhibiting the flow of water or other fluids.

air outlet see supply air terminal unit. —60

air pocket see air void.

air pollution pollution caused by incomplete combustion of fossil fuels, emissions from various industrial processes, dust and grit from quarries and cement works, and the fumes from chemical works, oil refineries and motor vehicles.

airport see air terminal.

air-raid shelter see civil defence shelter. —61

air receiver see air vessel.

air release valve, bleed valve, pet-cock; a valve for releasing unwanted air or other gases from a system of pipes, cisterns etc.

air resistance the property of a pigment to remain stable both in colour and in texture when exposed to the effects of air and air-borne dust.

air seasoned see air dried.

airstream see air jet.

airstrip, runway; a flat strip of tarmac or concrete paved with tarmac or concrete with white markings and guide lights, for air traffic control and land.

air-supported structure, pneumatic structure; any structure inflated with air and supported by structural support.

air terminal, airport; a complex of buildings and associated buildings at which commercial aircraft are landed for loading and unloading of goods.

air terminal unit 1 in air conditioning, any device, grille, diffuser etc. through which air is supplied to or extracted from a space.

2 see supply air terminal unit.

see *air terminal unit* in office building illustration. —60

air termination a component or system of rods or horizontal metal rods located at the top of a building to intercept lightning strikes; part of a lightning protection installation for a building.

air test, pneumatic test; a test to detect leaks in pipework using a soap solution which is introduced into the closed system and the pressure monitored over a period of time.

airtight, hermetic; furnished with gaskets or other mechanisms to prevent the flow of air into or out of an enclosed space; impermeable to air.

air-to-air heat transmission coefficient see U-value.

air treatment in air conditioning, the process of cooling, purifying, filtering and dehumidifying of air from the outside before its distribution.

air vent a terminal device designed to control the passage of fresh air to a space from the outside or for release of stale air. —56

air vessel, air receiver; a pressurized container in a compression system for the storage of compressed air for use while the pump is not in operation.

air void, air pocket; in concreting, a cavity or voids in hardened concrete caused by air bubbles either introduced as entrapped air or unremoved from entrapped air.

aisle 1 an open passageway in a building for air circulation.

2 a longitudinal corridor flanking the nave of a church, basilica etc., bounded by an arcade or row of columns.

see *Roman basilica* illustration. →93

see *Early Christian church* illustration. →95

see *Byzantine domical church* illustration. →96

see *Carolingian abbey church* illustration. →98

see *Romanesque church* illustration. →99

see *Gothic cathedral* illustration. →100

see *Scandinavian hall church* illustration. →102

3 an open corridor running down the side of certain traditional timber-framed buildings, bounded by main posts and side walls.

aisled building a traditional timber-framed building type with rows of intermediate posts to support roof construction, thus forming side aisles in plan.

aisle post, arcade post; in traditional timber-framed building, one of a number of intermediate posts supporting a roof and forming an interior aisle or arcade.

akanthos Greek form of acanthus. →81, →82, →121

akheiropeitos Greek form of acheiropeitos.

Akkadian period, Accadian period; a naturalistic period in Mesopotamian art from the Akkadian age, 2470–2285 BC.

akropodion Greek form of acropodium.

akropolis Greek form of acropolis. →94

akroterion Greek form of acroterion. →78

ala 1 Lat., pl. *alae*; a small opening, alcove or room off the atrium in a Roman dwelling. →88

2 one of the side extensions of the rear wall of the cella of an Etruscan temple. →85

3 a side aisle in a basilica.

alabaster 1 a compact, fine-grained form of pure gypsum (calcium sulphate) with similar rocks such as calcareous sinter or onyx marble; easily worked, and used for interior decoration and sculptured ornament.

2 marble white, orange grey; a shade of light orange grey which takes its name from the above and some pale-coloured forms of marble.

alabastron an ancient Greek round-bottomed ceramic jug for containing ointment, perfume and oil; especially one made from alabaster.

alae plural form of *ala*. →85

alarm 1 any security or safety device which produces a signal in the form of a noise or light once triggered by a detector.

2 see fire alarm.

alarm bell a metal percussive device which produces a noise as an alarm sound.

alarm glass laminated glass whose interlayer is inlaid with fine electric wires connected to a circuit, which activate an alarm if broken.

alarm system 1 a system of warning bells, lights and other means which react to the presence of hazards in buildings such as fire, toxic gases and unauthorized entrants.

2 see intruder alarm system.

alarm thermometer a thermometer which sounds an alarm when a certain temperature has been reached.

alatorium Lat.; a wall-walk behind the battlements of a Roman fortification to enable defending soldiers to protect their position from above; an alure or parapet walk.

albarium opus Lat.; see *opus albarium*. →83

albedo see reflectance.

album Lat.; a tablet where announcements and messages were left, set in a public place in a Roman town.

albumen glue glue manufactured from egg protein.

albumen print a type of early photographic print, introduced in 1850, produced on paper coated with albumen (egg-white) and salt with silver nitrate.

alburnum see sapwood. →1

alcazar a Spanish fortified dwelling or palace, in particular a Moorish palace in an urban setting, inhabited by the regional military governor.

alcove 1 any recess formed in the thickness of, or bounded by, the wall of a room.

2 a similar recess to contain a bed.

3 see *ala*. →88

alder [*Alnus spp.*] a group of hardwoods with light, soft, fine-textured, non-durable, pinkish timber.

Alnus glutinosa, see common alder.

Alnus incana, see grey alder.

Alnus rubra, see red alder.

aleatorium Lat.; a room for playing dice games in a classical Roman building.

aleipterion Gk; see alipterion. →91

Aleurites spp. see tung oil.

Alexandrian blue see Egyptian blue.

alexandrinum see *opus alexandrinum*.

algebra a mathematical system of calculation and investigation in which numbers are substituted by symbols.

algorithm a set of rules or procedures for solving calculations, the basis of a computer program.

aliasing in computer graphics, imperfections in lower resolution graphics which make diagonal lines appear stepped.

alidade, diopter; a sighting device at a certain level.

alien house a monastic settlement in the Middle Ages by most usually France.

alignment 1 the compositional line of building masses or adjacent surfaces, points and patterns.

2 a prehistoric straight row of stones laid out for ceremonial, astronomical or other purposes.

alipterion, unctuarium (Lat.); a nymphaeum or bath house in which bathers were treated with oils; alternative spelling is aleipterion.

alizarin 1 a red dye used by the ancients, produced by grinding the root of the madder plant, [*Rubia tinctorum*]; it has since been manufactured artificially from anthracene.

2 alizarin colour; a range of dyestuffs produced in this way, with the addition of metallic salts, of different shades of colour.

alizarin blue a range of artificial blue dyes for printing inks; see alizarin.

alizarin brown, madder brown, a brown form of the pigment alizarin.

alizarin colour see alizarin.

alizarin crimson, alizarin lake, alizarin red, alizarin scarlet; an organic synthetic red pigment produced from anthracene, a coal tar derivative, first synthesized in 1868 and used in water-based and oil-based paints.

alizarin lake see alizarin crimson.

alizarin red see alizarin crimson.

alizarin scarlet see alizarin crimson.

alizarin violet, violet madder, a purple pigment made from madder purpurin.

alizarin yellow a synthetic transparent yellow pigment; see alizarin.

alkali a water-soluble base or hydroxide, which reacts with acids.

alkali-aggregate reaction, concrete alkali-aggregate reaction; an undesirable chemical reaction in concrete caused by alkalis contained in the Portland cement reacting with some aggregates, causing internal expansion and scaling of the surface.

alkali feldspar a mineral, potassium feldspar, sodium-enriched plagioclase rock.

alkali metal one of a group of soft, silvery metals (lithium, potassium etc.) which form soluble hydroxides.

alkaline having the characteristic of an alkali, containing an alkali.

12 alkaline cleaning agent

alkaline cleaning agent any highly effective metal cleaning product based on a solution of sodium hydroxide (caustic soda) or potassium hydroxide (NaOH, KOH), silicates, or phosphates, with a balanced amount of surfactants in water.

alkaline-earth metal one of a group of light volatile metal elements from group IIa of the periodic table (beryllium, calcium, strontium, magnesium, barium and radium), which form strong alkaline oxide.

alkalinity the ability of a water-based solution to react with hydrogen ions.

alkali-reactive referring to a chemical compound which reacts with an alkali.

alkali-resistant paint acrylic or resin paint with good resistance to alkali attack, suitable for use on concrete surfaces.

alkali-resistant primer primer used on concrete surfaces beneath other paints to protect them against alkali attack from the concrete.

alkali wash a treatment to remove grease and other impurities from metal surfaces with an alkaline solution containing a detergent and a surfactant before coating or painting.

alkyd baking enamel see alkyd stoving enamel.

alkyd paint an oil paint which contains alkyd resins, used externally as a coating and wood preservative; it is easy to brush, durable and quick drying.

alkyd putty a sealing and glazing compound with an alkyd resin binder.

alkyd resin a synthetic polyester resin used in the manufacture of paints, formed by combining an alcohol with an acid.

alkyd stoving enamel, alkyd baking enamel; a hardwearing paint coating used for metal components, based on a melamine or carbamine and alkyd resin binder, applied as a liquid spray and baked on.

alkyd varnish a varnish with alkyd resin as a binder, used as a protective coating for furniture, joinery and timber floors.

alla prima, au premier coup; a method of oil painting in which a single layer of pigment is applied to a white canvas without the use of a base, retouching, glazes or underpainting.

allegory art which seeks to convey an idea or feeling through the portrayal of a tale, event or situation.

allen head screw a screw with hexagonal recess in its head, turned using an allen key. →36

allen key a small L-shaped metal spanner, hexagonal in cross-section, for tightening bolts and screws with a suitably shaped sinking in their heads.

alley, close (Sc); a narrow external circulation space in an urban area, a road or path bounded on both sides by built form, intended for pedestrians and vehicles.

all-glass balustrade a simple balustrade which is a sheet of toughened and/or laminated glass, secured at its lower edge. →54

all-glass door a door whose leaf is an unframed sheet of structural glass, often tempered or laminated, to which hinges and door furniture are fixed. →51

see *types of door* illustration. →51

see *office building* illustration. →60

alligating see crocodiling.

allocation see appropriation.

allotment a small plot of usually public land, often in an urban setting, set aside for the cultivation of vegetables and other plants by local inhabitants.

allowance, 1 clearance, installation allowance; spaces left between adjacent components in design such as the space between a hinged door leaf or window casement and its frame, to allow for fitting, installation, manufacturing tolerances, expansion, workmanship and movement. →51

2 see rebate.

alloy 1 a composition of two or more chemical elements, one of which is always a metal, combined together to form a metal substance which benefits from their combined properties to provide improved strength, ductility, corrosion resistance etc.

2 the level of purity of a precious metal such as silver or gold, measured in carats.

alloy steel steel which contains over 5% carbon and other metals to improve its basic properties of strength, hardness and resistance to corrosion.

all-seeing eye see eye of God. →119

all-surface pencil a pencil with a special lead, often coloured, which can leave a line on any surface, including glass.

allure see allure. →103

alluvial deposit a soil type which has been deposited by the action of a river or stream.

almandine a reddish variety of the mineral garnet.

almaly see aumbry.

almery see aumbry.

almond the mystical almond; see mandorla. →119

almond green a shade of dark green which takes its name from the underside of the leaves of the almond tree (*Amygdalus communis*, *Prunus dulcis*, *Prunus amygdalus*).

almond tree see almond green.

almonry a room or outbuilding of a monastery from which alms are distributed to the poor and needy.

see *almonry* in Carolingian monasteries illustration. →97

almshouse a dwelling or group of dwellings traditionally provided for the poor, often at the expense of private money or charity.

***Alnus* spp.** see alder.

Alnus glutinosa, see common alder.

Alnus incana, see grey alder.

Alnus rubra, see red alder.

alona see African walnut.

along the grain parallel to the grain in timber.

alpha and omega the first and last letters of the Greek alphabet, α and ω or A and Ω , symbolizing eternity of God, without beginning or end, in religious symbolism. →119

alpha radiation penetrating radiation consisting of positively charged alpha nuclei emitted from naturally radioactive substances.

altar 1 the focal point of worship in a church, often a shrine.

see *types of altar* illustration. →116

see *Greek residential building* illustration. →116

see *Scandinavian church* illustration. →116

2 see sacrificial altar.

3 see thyme. →89

4 see high altar. →95

5 see side altar, by-altar. →96

6 see hestia. →87

7 see lararium. →88

8 see eschara. →87, →116

9 see bomos. →84, →92, →116

altar canopy in religious architecture a structure over an altar; a ciborium over an altar; a tabernacle. →95, →116

altare mobile Lat.; see portable. →116

altare portatile Lat.; see portable. →116

altar frontal 1 see antependium. →116

2 see antemensale. →116

altarpiece a work of art containing religious figures placed behind an altar and often within a frame or portico.

see *altar* illustration. →116

see *Scandinavian hall church* illustration. →116

altar platform 1 see suppedaneum. →116

2 see bema. →95, →96

altar rail, communion rail; in religious architecture, a rail or low balustrade in front of an altar which separates the altar and choir.

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