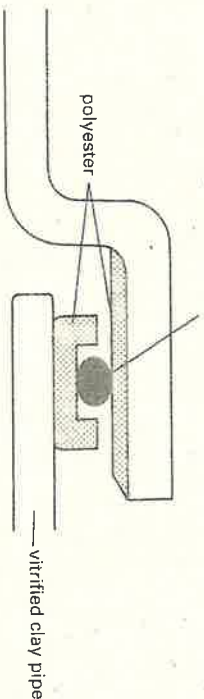
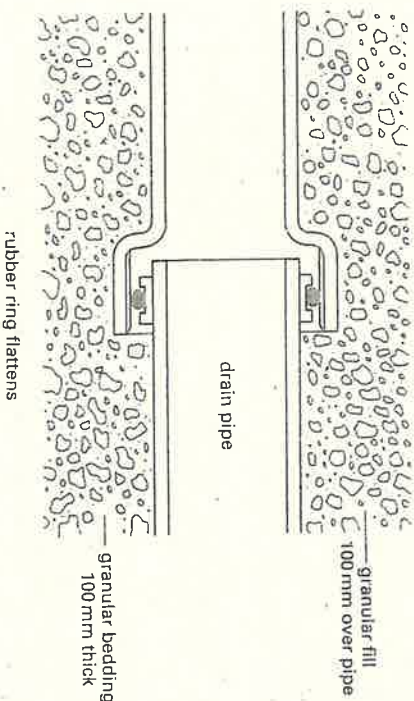


Busta 5

1. Il candidato, incaricato delle funzioni di Direttore dei lavori per un intervento di manutenzione straordinaria che riguardano la riqualificazione di un piano di un edificio della Scuola, ha convocato l'impresa appaltatrice per procedere alla sottoscrizione del Verbale di Consegna dei lavori. L'appaltatore rileva la presenza nei locali di attrezzature e materiali da laboratorio che, contrariamente a quanto previsto, gli utenti dei locali hanno trascurato di traslocare, e rappresenta la sua intenzione di sottoscrivere con riserva il Verbale. Il candidato illustri le competenze del Direttore dei lavori relativamente alle operazioni di avvio dell'esecuzione del contratto ai sensi del codice dei contratti pubblici, nonché le tipologie di opere rientranti nella categoria della manutenzione straordinaria ed esponga il suo approccio comportamentale nella gestione della situazione in atto, con riferimento al proprio e agli altri ruoli tipici di un appalto pubblico.
2. Gli strumenti di programmazione nello Statuto della Scuola.
3. Il candidato proceda ad effettuare la campitura con autocad.
4. Lettura e traduzione del testo evidenziato nel foglio 5.

drain shoe



A vitrified clay drain pipe with push-fit joints on a granular bedding.

can be joined end-to-end and used for rodding drain pipes. See diagram, p. 374.

drain shoe A special drain fitting with both an access cover and an inlet for a downpipe.

drain test Drains are tested after laying, before the trench is backfilled. The main test, usually a *hydraulic test* (C), is for leakage and is made as each drain run is completed, with a check for straightness between manholes. At commissioning the main tests are for flow rate and freedom from debris by a ball test.

draught (USA draft) (1) The flow of air and burnt gases up a flue which occurs either because of their buoyancy or from the effect of a power-

driven fan, or both. The draught pressure is usually measured by a *U-gauge* in millimetres of *water gauge*.

(2) An air current that causes discomfort by chilling.

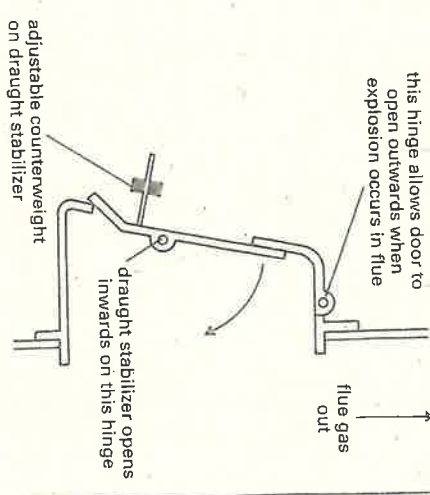
(3) The amount by which holes are out of line in *draboring*.

(4) **draw** The inward taper or slope given to the sides of *formwork* so that it can be slid away from the hardened concrete.

draught stabilizer, d. diverter (USA barometric damper) A vertical metal plate in the sidewall of a flue, pivoted horizontally and counterbalanced so that the draught cannot be excessive for long. When the draught increases too much, the plate is sucked inwards, admitting cold air and thus reducing the draught. It

FOGLIO 5

draw-in system



A draught stabilizer for an oil-fired boiler.

automatically closes when the draught diminishes, thus ensuring the correct draught. See diagram.

draught stop A fire stop.

draught strip, d. stripping *Weatherstripping*.

draw bolt A barrel bolt.

draboring Drilling holes through a *tenon* and the morticed piece about 3 mm out of line (the draught) so that a tapered steel pin driven through the holes will pull the pieces tightly together. The steel pin is later replaced with an oaken *trussell*, making a joint without glue that can be dismantled and reassembled.

draw cable, d. wire (USA fish tape) A wire left in a *cable duct* or *conduit* during construction for a *draw-in system* of wiring or cables. Reels of draw line may also be blown through conduit using compressed air.

draw-in box, pull b. A box in a *draw-in system*.

drawings The main working documents used on site: plans, sections, and elevations - on a large project there are hundreds, grouped in sets. Small-scale drawings (such as floor plans) show the layout for *setting-out*; large-scale ones show *details*. Both may have *dimensions* and descriptive notes. Drawings may be either *contract documents*, such as the architectural, structural, and services drawings, or for *coordination* between trades, such as the builder's work, shop, and marking drawings. For complex services, drawings may go through many *revisions* during the contract, which are noted briefly in the *title block*. The last drawing revision should form the *as-built* set.

drawing symbols Marks on drawings (usually the plans) which indicate particular materials or components. See diagram, p. 138.

draw-in system A system of wiring *conduits* or larger cable ducts, usually cast into the concrete *structure*, through which wires can be pulled in from the

Busta 1

1. Nel corso di un sopralluogo in un cantiere di lavori di riqualificazione di un edificio della Scuola, il candidato, che svolge l'incarico di Direttore operativo per i lavori edili, rileva che maestranze dell'impresa appaltatrice stanno commettendo un grave errore tecnico nell'esecuzione delle opere di coibentazione e di impermeabilizzazione della copertura (piana e praticabile) del fabbricato.

Il candidato illustri la natura e le caratteristiche del ruolo di Direttore operativo ai sensi del codice dei contratti pubblici, nonché una soluzione costruttiva per la coibentazione e l'impermeabilizzazione di una copertura piana ed esponga il suo approccio comportamentale nella gestione della situazione in atto, con riferimento al proprio e agli altri ruoli tipici di un appalto pubblico.

2. La/Il Rettrice/Rettore nello Statuto della Scuola Sant'Anna.
3. Il candidato proceda a dotare un documento word di paragrafi e sommario.
4. Lettura e traduzione del testo evidenziato nel foglio 1.

bronze disease

types are *silicon bronze* and *gunmetal*. Bronzes are joined by *brazing*.

bronze disease Bright green spots of cuprous chloride on bronze from chloride attack, damaging the *patina*. It can occur if relative humidity is over 40% or from contact with wood, sea spray etc. and is removed by ultrasonic cleaning, chemicals or electrolysis.

broom-finish concrete A floor slab that is floated and trowelled smooth, then finished by drawing a stiff broom across it to make a non-slip surface.

brooming Scratching a floating coat with a stiff broom to make a key for plaster, or making a *broom finish* to concrete.

browning Undercoat plaster made from *gypsum* and sand, introduced in 1930, replacing lime: sand *course stuff*. These are both now rare in new work compared with pre-mixed *lightweight plasters*. Browning is applied in two or three coats, with mixes of 1:14 to 1:3 plaster:sand.

brownstone A house faced with dark brown sandstone, formerly plentiful in America.

brush Paint brushes are made from synthetic fibres or animal bristles (stiff hairs) held on to a handle, usually with a metal ring or *ferrule*. The bristles of larger brushes may be set in synthetic resin. Brushes are used for the *application* of coats, the *cutting-in* of edges, or the *stippling* of finish coats. They should be thoroughly washed with *solvent* after use, but can be kept in water overnight.

brushability The ease with which paint can be applied by brushing. Brushable paints are not gummy, do not cause *robbers* and enable a *free edge* to be easily picked up.

brushing (1) Wood *primer* should be brushed, not sprayed. Paint for top coats is spread evenly by *crossing* followed by *laying-off*.

(2) The removal of loose material from a surface by vigorous brushing with a wire brush, usually as *preparation* of a *substrate* for painting. Brushing is not suitable for *dusting*.

brush seal A long strip of bristles fixed to project from the edge of a door leaf, as a *couping seal* for *weatherstripping* or for *smoke control*.

BS British Standard.

BSI British Standards Institution.

BTU, BTMU A British Thermal Unit.

bubbling Bubbles of vapour in a paint film containing very volatile solvents. If they disappear before the film dries they are not a *defect*.

buck (USA) A *subframe* for a door or window.

bucket-handle joint, concave joint A durable *face joint* in brickwork, hollowed out by pushing along a *jointing tool* to compact the mortar.

buckle clip A sheet metal *cable clip* with a buckle end and a fixing nail.

buckshot A clayey sand with spots of darker clay. It collapses suddenly after several hours if left unsupported.

buff To polish or grind down a floor finish of *terrazzo* or screeded material. The process is derived from the high-speed buffing wheels of mechanical engineering, formerly of buffalo leather, which polish with slight abrasion.

buggy (USA) A *motorized burrow*.

build The thickness of a *film* of paint or a coat of filler compared with the usual or the total thickness. See *high-build coating*.

FOGLIO 1

buildability Simplicity of design, enabling site work to be quick and easy. In general *brickwork* has good buildability. See *Good Building Guides*.

build and burrow A time-saving building technique in which *piles* (C) are first sunk for foundations and *substructure* columns, then the *ground floor* is built. Normal *bottom-up construction* of the superstructure then follows, simultaneously with *top-down* excavation and construction of the substructure, one *sub-level* at a time.

builder (1) A house builder, usually a skilled tradesman who works on site and does his own estimating and contract negotiations.

(2) A building company, usually a *main contractor* for large building projects and associated *external works*. The biggest builders employ hundreds of professional staff and site personnel to do each specialist job. In France, Germany, and Japan, builders usually do the detailed design.

(3) See *chartered builder*.

builder's equipment See *contractor's plant* (C).

builder's handyman A *jobber*.

builder's labourer A *semi-skilled* worker who does general work such as demolition, digging, unloading deliveries, cleaning up, and concreting.

builder's ladder A single-length ladder with round *rings*, used by leaning against a wall and usually made of aluminium or fibreglass.

builder's level A spirit level or a *dumpy level* (C).

builder's lift A temporary *lift* for materials and passengers. It usually stands on its own base beside the new building, has a platform and cage rather than an enclosed car, and is larger than a *hoist*.

building block

builder's line A *line*.

builder's rubbish Rubbish from the *building trades*. It does not include *spoil* from excavations.

builder's staging A mason's *scaffold*.

builder's tape A tape for *setting-out*, usually 30 m long and made of steel or PVC-coated fibreglass, which rolls up into a handy case.

builder's work drawing A drawing showing any *builder's work in connection* required by a specialist sub-contractor. To allow *coordination*, the drawings are given to the *main contractor* before structural work is started.

builder's work in connection (BWIC) Work in the *building trades* that needs to be done to help work in other trades, particularly the *mechanical and electrical* services. Builder's work in connection is usually done by the *main contractor* as *attendance*. It can include forming *penetrations* to run pipes, placing *concrete inserts* to carry fixings, laying blockwork to form a *services duct*, and removing *protection of finishings* at the end of the job.

building A building is any structure with a roof to provide shelter from the weather for occupants or contents, although it may also have other *elements*. Houses (residential work) are often designed by local builders, while larger projects with complicated *services*, such as office blocks, car parks, and airport terminals (industrial and commercial work), are designed by *architects* or other consultants.

Building Act 1984 The legislation that governs building in the UK, involving the *Building Regulations*.

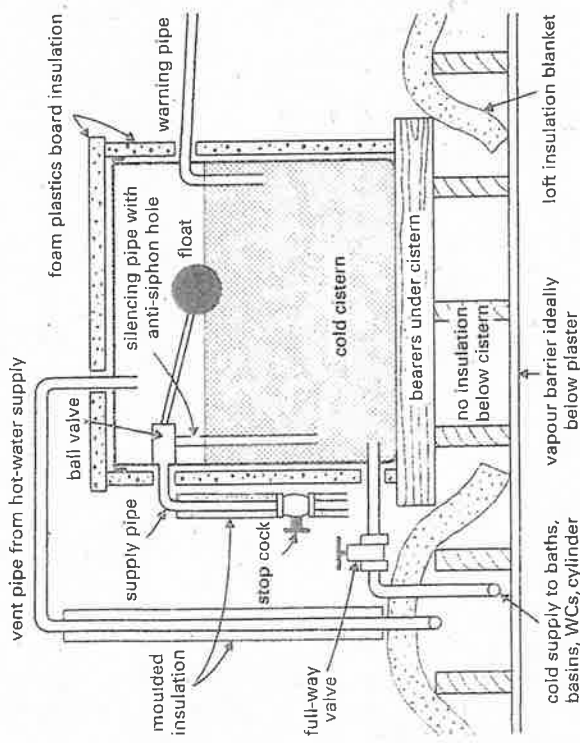
building block A block of precast concrete, burnt clay, etc.

Busta 2

1. Nel corso della sua attività ispettiva in un cantiere di lavori di riqualificazione di un edificio della Scuola, il candidato, che svolge l'incarico di Ispettore di cantiere, rileva che vengono consegnati a piè d'opera, dal sub-fornitore dell'appaltatore, dei dispositivi di rivelazione fumi e incendi diversi da quelli previsti nei documenti contrattuali per la realizzazione dell'impianto. Il direttore del cantiere/appaltatore sostiene che si tratti di attrezzature analoghe ed equipollenti a quelle contrattualmente previste e chiede, qualora l'Ispettore non ammetta la fornitura, che venga immediatamente sottoscritto un Verbale di sospensione dei lavori, in quanto questi ultimi non potranno riprendere se non quando verranno forniti gli apparati del tipo richiesto dalla stazione appaltante.

Il candidato illustri la natura e le caratteristiche del ruolo di Ispettore di cantiere ai sensi del codice dei contratti pubblici, nonché le funzioni di un impianto di rivelazione fumi e incendi ed esponga il suo approccio comportamentale nella gestione della situazione in atto, con riferimento al proprio e agli altri ruoli tipici di un appalto pubblico e all'istituto della sospensione dei lavori.

2. Le funzioni e la composizione del Consiglio di amministrazione nello Statuto della Scuola Sant'Anna.
3. Il candidato proceda a impostare un nuovo layer in autocad.
4. Lettura e traduzione del testo evidenziato nel foglio 2.



Cistern insulation.

tight skin covering an external wall, as part of the building enclosure. It is usually functional, but can include decorative facade cladding, and may have insulation or give some degree of security. Cladding is non-loadbearing and has to bear wind loads, impact damage, and temperature extremes. Long panels must allow free thermal movement. It can be of any durable material, such as profiled sheeting, brickwork, or weatherboard, or a system such as curtain walling, patent glazing, cladding panels, insulating over-cladding, or thin stone facings. Doors and windows may be included, but solid masonry is not cladding. Compare lining.

(2) A finishing or protective shell.

cladding panel Prefabricated factory-

clamp (1) A device for holding things together, often relying on a screw to tighten them. Formwork clamps are used while concrete is hardening, one of the most versatile being the column yoke. Clamps for services fixings usually grip from both sides and are stronger than clips or cleats. See also cramp.

(2) Clay bricks and fuel specially stacked in the open, or under an open-sided shelter, then set alight and burnt. clamping plate A metal timber connector.

clamping time The length of time for which a joint needs to be held under pressure while an adhesive is setting, according to the amount of stress and the speed of curing.

clarification Additional information requested when the contract documents do not show exactly how something is to be built or when documents of equal precedence disagree.

clashing, interference The situation occurring when building services by different trades are both designed to fit into the same space, owing to lack of coordination. It is not unusual to change the detail layout of services on site, particularly in confined areas such as the space above a suspended ceiling, which apart from air-conditioning ductwork may also contain luminaires, pipework, and electrical trunking.

Class 0 (UK) A classification for fire hazard under the Building Regulations, given to materials tested to BS 476, which are: 'non-combustible' according to the non-combustibility test; have Class 1 flame spread; and have a low fire propagation index.

claw A curved split peen on a claw hammer or a pinch bar, used for pulling out nails.

claw-bolt lock A lock for a sliding

door, with a claw that grips the striking plate.

claw hammer, carpenter's h. A hammer with the usual flat face for driving nails and a claw, used for framing and formwork carpentry.

clay (1) As a foundation material clay has several disadvantages, notably its high moisture movement necessitating the use of deep foundations (C), etc. Clays vary widely in properties; some have more moisture movement than others, being affected by trees (such as poplars) and seasonal wet and dry cycles, which may lead to cracking in brick walls. See BRE Digest 343.

(2) The raw material for ceramics. There are many different types of clay.

clay brick The traditional building brick, made by shaping clay, then firing it in a kiln (or a clamp) until hard-burnt. The oldest types are handmade wet moulded bricks, and later stock bricks. The introduction of pressed bricks led to much stronger engineering bricks, now partly replaced by cheaper wirecuts. Clay bricks in general have excellent durability and low moisture movement, but all have some moisture expansion. See Fletton brick, Keuper marl brick, London stock brick, Staffordshire blue brick.

clay tile Any floor tile, wall tile, or roof tile made from burnt clay. Manufacturing processes vary in complexity, from extensive treatment and refining of the material for ceramic tiles to simpler shaping and firing for terracotta and quarries.

clayware Sanitary fittings and pipes made from burnt clay, which look good but are easily chipped or broken.

clean aggregate Granular material which is free of clay, silt, and organic

Busta 6

1. Il candidato, svolgendo funzioni di supporto al Responsabile Unico del Progetto per un intervento di ristrutturazione di un fabbricato della Scuola, nell'ambito delle attività volte alla verifica del progetto esecutivo (redatto da professionisti esterni incaricati), ravvisa la presenza nell'Elenco dei Prezzi unitari d'appalto di voci di elenco che non sono state direttamente estratte dal Prezzario ufficiale di riferimento per la regione Toscana per l'anno corrente.

Il candidato discuta, richiamando le prescrizioni normative in materia di prezzi unitari, l'ammissibilità delle voci d'elenco utilizzate dai progettisti ovvero le possibili alternative da segnalare ai progettisti, nonché la natura e le caratteristiche salienti dell'istituto della verifica della progettazione e dei compiti del RUP a tale riguardo.

2. Le fonti di finanziamento e il patrimonio della Scuola Sant'Anna, con riferimento allo Statuto.
3. Il candidato proceda ad inserire una porzione di immagine in un documento word.
4. Lettura e traduzione del testo evidenziato nel foglio 6.

foul-air flue

foul-air flue A ventilating duct which draws air out of a room.

foul drain A drain to carry foul water from a building to the sewers.

foul water Water that is contaminated with soil water, waste water, or industrial effluent, in a foul drain. This usually excludes rainwater.

foundation (1) The supporting ground underneath a building. Excavations for foundations are taken down to good ground. See *cracking in brick walls*.

(2) The part of a building which sits on the ground, to carry the *substructure*. Low-rise buildings and houses commonly have shallow foundations, usually *strip footings*, while medium-rise buildings may need *pad footings* or a *ruff foundation* (C). High-rise buildings on clay are often on deep foundations such as *piles* (C). See *trees*.

foundation bolt A *holding-down bolt*.

foundation inspection An examination by the *building inspector* (or *clerk of works*) of the ground on which *footings* are to be built, to ensure compliance with the *Building Regulations* (and the *specification*). Once approval is given (usually in writing) either *footings* should be concreted immediately or *blinding concrete* laid to protect the *formation*.

four-coat system The traditional way to paint new wood. There is agreement that the *paint system* should include *primer*, *undercoat*, and *gloss coat*, but some authorities insist on two undercoats, others on two gloss coats (some gloss coats cannot be put on to another gloss coat). For internal work a good finish may be had by using two undercoats and *flattening-down* before recoating. A slight *tint* is added to one undercoat, so that *steps* can be seen. For outside work, better protection should be had from two gloss coats.

f.b. and boarded d. A *matchboarded door*.

framed partition, stud p., stud wall A *partition* built up on its own frame of timber or steel studs and covered with a lining material.

frame house (USA) *Timber-frame construction*.

frame room A *plantroom* for a telephone *main distribution frame*.

frame saw A *gang saw* with a number of blades in one frame, used to cut several slabs of wood or stone in one operation, giving even thickness and fairly smooth faces. Frame saws with diamond-toothed blades are used to cut slates.

frame tie A *wall tie*.

framework See *frame*.

framing (1) The work of building a *frame*.

(2) Frame members, as of a door *leaf frame* or a *curtain wall*.

framing gun A large *nail gun* that drives nails 100 mm long or longer.

framing square A *steel square*.

free cooling The use of cool air from outside a building, instead of running a water *chiller*, to cope with heat from lighting and computers.

free float Spare time for an *activity* on a *programme*, left over from the early completion of previous activities. It can be used without delaying later activities.

free lime Lime inside set concrete, produced by chemical reactions as the *cement sets*. It may be further converted by *carbonation* or a *hardener* or, if moisture is present, cause corrosion of lead metal.

freemason In the Middle Ages and later, a skilled mason capable of carving

freestone. He was paid more than a rough mason.

freestanding (1) *self-supporting* Of a building element or structure, able to stay upright by itself, as do chimneys, parapets, and scaffolds.

(2) Of equipment, double-sided, e.g. a bench accessible from both sides.

freestone Building stone soft enough to be cut with steel tools and uniform enough to be carved in any direction, being free of *cleavage* — generally limestone or fine-grained sandstones with high compressive strength and good durability. Usually freestone can be laid at any angle.

free stuff *Clear timber*.

freezer A cold store kept below 0°C, either down to -16°C or a *deep freezer*.

The *insulation* needs a *vapour barrier* on the outside (warm side). Freezers on the ground need a vapour barrier over the foundations, with ventilation from its top side ('cold side'), to prevent ice forming from *rising damp* and causing *frost heave* (C).

freeze-thaw cycle A series of temperatures that rise and fall above and below freezing, which may damage saturated, porous materials. In brickwork the damage is avoided by using *frost-resistant bricks* or by excluding damp with protective overhangs, *copings*, *weatherings*, and *damp-proof courses*.

freight elevator, trunk lift (USA) A *service lift* which is used for hoisting furniture and other heavy loads in a building, but not for carrying passengers.

French casement, F. door, F. window A *casement door*.

French drag A mason's hand tool resembling a plasterer's *float*, with several metal blades set upright in

Busta 10

1. La Scuola deve procedere all'esecuzione di lavori di ristrutturazione in un edificio sede di attività di ricerca per i quali è già stata svolta la gara per l'affidamento ed è stato sottoscritto il contratto. Anche in un fabbricato limitrofo al primo, sito nello stesso compendio, a causa di ritardi dell'affidamento prodotti dal ricorso di un concorrente alla gara, devono, con urgenza, essere avviati lavori di manutenzione straordinaria che si programmava di aver già terminato. I due cantieri devono quindi essere avviati contemporaneamente, per rispettare le scadenze imposte per la rendicontazione di cofinanziamenti statali.
Il candidato indichi quali sono gli adempimenti obbligatori e quali azioni di coordinamento ritiene indispensabili e/o opportune per consentire lo sviluppo contestuale dei due cantieri, anche con riferimento ai ruoli tipici e alle relative responsabilità e competenze.
2. Natura e finalità della Scuola Sant'Anna.
3. Il candidato effettui un grafico su excel.
4. Lettura e traduzione del testo evidenziato nel foglio 10.

reflective glass

reflective glass A type of solar-control glazing.

reflective insulation Insulating materials with a shiny surface, e.g. *aluminium foil*, which have *low emissivity*. They reduce heat loss from radiation.

reflector (1) A light-coloured or shiny metal surface behind a lamp to direct light back or to disperse it and reduce glare.
(2) A *luminaire* with a reflector, such as an industrial *fluorescent tube* with baring sides. It is used as a *downlighter* for high bay lighting.

reflux valve See *check valve* (C).

refractory mortar Mortar able to withstand very high temperatures. One suitable mix is three parts *grog* and one part *high-alumina cement* (C).

refrigerant The working fluid in a *refrigerator*, which alternates between being a liquid and being a vapour. Compressor refrigerators using the *vapour compression cycle* have different refrigerants from *absorption refrigerators*.

refrigerated storage A cold store or a freezer.

refrigeration unit, r. machine A chiller.

refrigerator A machine used to produce or maintain low temperatures. They work either on the *vapour compression cycle* or by *absorption*.

refurbishment, rehabilitation
Bringing back an old building to a useful condition, using original materials or modern imitations, but usually without major *conversion*. The work can be limited to simple maintenance and restoration of the exterior with renovation and redecoration of the interior, or go as far as almost total demolition, with only *façade retention*. ~~There are~~

particular dangers in removing *lead paints* and *asbestos* or in *cleaning down* masonry. Special *fire precautions* and *hot-work permits* may also be needed.

refuse chute A vertical pipe for refuse disposal in high-rise housing and multi-storey buildings. The chute should be round and at least 375 mm dia., preferably larger. Rubbish is put in through a hopper, usually in a public area, and drops into a receiving chamber under the building. See BS 1703.

register (1) An outlet into a room from an air-conditioning duct, with a *dumper* and *grille* or diffuser. It is an *air terminal unit* for supply air.
(2) A chimney *dampener*.

reglet A *raglet*.

regrating The *cleaning-down* of stone masonry.

regular coursed rubble (USA) **regular ashlar, range masonry, range work** Coursed rubble walling in courses of different heights, generally from 75 to 150 mm.

regularized wood Wood that has been machined by planing or thicknessing on two or four sides to provide a true, flat surface. The aim is not strength or beauty but to make the cross-section uniform throughout its length, and there may be rough unplanned patches.

regulus metal An alloy of lead and 10% antimony. It is easier to work than pure lead and resists *creep* (C).

rehabilitation *Refrurbishment*.

re-heat unit, terminal r.u. An *air terminal unit* with a heating battery for the final adjustment of supply air temperature before discharge. It is usually controlled by a room thermostat.

reinforced bitumen felt A lightweight *bitumen felt* made of fibre satur-

FOGLIO 10

rendering

ated with *bitumen*, with an embedded layer of *jute hessian*. It is used as an *underlay* on unboarded roofs.

reinforced concrete Concrete with steel reinforcement, a versatile material widely used in the loadbearing structure of buildings. See C.

reinforced masonry Brick, block, or stone work reinforced with steel, such as wire mesh in the *bed joints* or bars in vertical holes filled with concrete.

reinforced screed A cement screed reinforced with light steel fabric.

reinforcement Small amounts of a strong material (steel bars, fibres) added to a weaker material (concrete, bitumen, plastics), usually during manufacture, giving a *composite*.

reinforcement bar, reinf., rebar, steel A steel rod used as reinforcement for concrete. The placing of bars inside *formwork* is done by *steelfixers* working to the structural drawings and bending schedules. The bars must have earth bonding. See cover.

reinforcement schedule A bending schedule.

relamping The replacement of the lamp in a *luminaire*. Commercial and office buildings are often fully relamped at the one time, the relamping being based on the economic cost of light loss as lamps get old. This can result in less disruption to people, allowing cleaning of the luminaire, and ensure that the right types of lamp and starter are used.

relative humidity The weight of water vapour in air compared with saturated air at the same temperature, usually given as a percentage. In winter, cold air from outdoors has a lower relative humidity once it is heated to room temperature, as warm air can carry more water vapour than

cold air. The feeling of dryness from the lower relative humidity can be corrected by a *humidifier*, although relative humidity has little effect on *comfort* provided it remains between 40 and 70%. Buildings need ventilation to remove warm moist indoor air. If it comes in contact with a cold surface it can reach 100% relative humidity, resulting in *condensation*.

relieving arch, safety a. A strong arch built into masonry above an opening to carry some of the load otherwise carried by a *lintel* or arch.

reloading Restoring power to a circuit after *load shedding*.

relocatable partition A *dismountable partition*, used in large offices. It can be moved often and easily.

remeasurement The measurement of actual quantities after work has been done, usually for contracts with a *schedule of prices* or *provisional bills*.

remedial work Work to make good a defect, improve existing ground, etc.

remote-entry system Usually an *intercom* from an entrance door whereby a tenant can allow people to get in by opening an *electric striking plate*.

render The mortar, or other mix, used for rendering or *stucco* work. Cement-based render needs similar curing to concrete.

render and set Plaster *two-coat work*.
render, float, and set Plaster *three-coat work*.

rendering Plastering with render, or the *finish* produced. Cement mortar and *rain mortar* render are not affected by dampness and generally keep out water. Mortar is used for all *undercoats*, as well as the *final coats* for external walls. Rainwater is thrown off external rendering by

Busta 4

1. Il candidato, quale tecnico della Scuola, nel corso di un sopralluogo in una sede destinata a laboratori di ricerca, rileva la presenza su di una parete di una stanza di una macchia di umidità molto evidente, che il personale del laboratorio riferisce essere apparsa da non più di 24 ore.

Il candidato illustri sinteticamente le possibili cause della presenza della macchia di umido, le ispezioni e gli accertamenti da porre in atto, nonché le successive azioni che ritiene di intraprendere, con riferimento alla agibilità del laboratorio e alle procedure tecniche e tecnico-amministrative da avviare per la soluzione del problema.

2. Nomina e funzioni della/dell Direttrice/Direttore generale nello Statuto della Scuola Sant'Anna.
3. Il candidato imposti l'orientamento e i margini di un documento word.
4. Lettura e traduzione del testo evidenziato nel foglio 4.

construction moisture

tor's manager, usually less senior than a *contracts manager*, in charge of one large project or of several *site managers*.

construction moisture Water in the fabric of a building, from *wet trades*, such as concrete work and brickwork, which needs *drying out* before dry trades can start.

Construction Products Directive (CPD) A European Community law aimed at removing barriers to trade between member countries. It requires construction products to meet six essential requirements in service: strength and stability; fire safety; health, hygiene, and the environment; safety in use; protection against noise; energy, economy, and heat retention.

construction time *Time for completion*.

consultant A person paid to give advice, for instance a registered *architect*, a chartered *consulting engineer* (C), *surveyor*, etc., who acts on behalf of a *client*. A consultant may design and prepare *contract documents* for a building project, call for *tenders*, and carry out the *supervision* of the work.

consumer unit A neat cabinet with equipment to control electricity supply to a house. Cables run to it from the *main unit* and meter. It usually contains an *earth bar* and the *fuseboard* leading to each outgoing circuit.

contact adhesives *Adhesives* which stick immediately the two surfaces are brought together, usually *latex cement* in a fast-drying solvent. They are applied 'two-way dry', that is spread on both surfaces and allowed to dry briefly before the parts are brought together. Firm but brief *pressure* may be required, but not clamping. The parts must be accurately aligned before they touch.

Foglio 4

for doors, finishings, etc., which show the building work to be done, plus the *conditions of contract* and *contract agreement*, prepared by an *architect* or consulting engineer. The *bills of quantities* can be a contract document, as can the builder's *programme*, but usually they have low *precedence*.

contractor A person (or company) who agrees to do something in return for payment. A building contractor agrees to carry out building work before a stated *completion date*, usually acting as the main or prime contractor, *subletting* specialist work to *sub-contractors*.

contractor's plant See C.

contractor's surveyor A *quantity surveyor* employed by a contractor, either for *estimating* or for the financial control of work on site.

contracts manager A person in charge of one large project or several small projects, usually located in head office and senior to a *construction manager*, although titles vary between contractors. Contracts managers have long experience in controlling building work and deal with the architect or engineer (or other client's representative).

contract sum, c. price The amount of money to be paid by the *client* to the contractor in return for putting up a building. The *agreement* gives details of payment, usually *monthly instalments* plus a *final account*, which takes into account any *variations*. See *claim*, *lump-sum contract*.

contract time *Time for completion*.

contractual foundations Simplified foundations used for estimating and programming works when real ground conditions are uncertain. After *good ground* is exposed the foundations are designed in detail and a *variation order* issued.

cooling tower

control gap A *movement joint*.

control gear The *starter* and *choke* or *ballast* used to strike the arc and limit current in a *discharge lamp*. It may consume power and produce heat.

controls See *automatic controls*.

control valve A *discharge valve*.

convection The upward flow of a heated fluid as it expands and becomes less dense, taking heat with it. The space it originally occupied is then filled by denser cooler fluid. This is the cause of the *stack effect* in chimneys or lift shafts, etc., in a fire. Heated air may rise in the centre of a room, to drop back down the cool walls.

convector A low-temperature *heater* which draws in cold air through the bottom of its casing, passes it over a heating element or coil, and releases warm air through a grille in the top. It may be a *fan convector*. See diagram, p. 102.

conversion (1) The work of making timbers out of logs by rip-sawing, splitting, or hewing parallel to the grain. Conversion has two stages: *breaking down* the sawlogs into *flitches*, then *sawing* into *square-sawn timbers*.

(2) Building alterations or renovation, often for a new type of *occupancy*.

(3) The highly undesirable weakening of concrete containing *high-alumina cement* (C).

conversion coating A *pretreatment primer*.

cooktop A *hob unit*.

cooler A *coolroom*.

cooling coil A *heat exchanger* supplied with *chilled water* from the air-conditioning plantroom, used to cool *supply air*. It usually has a *condensates pan*.

cooling tower A device for cooling large quantities of warm water by spray-

Busta 8

1. Nel corso di un intervento di riqualificazione di un fabbricato della Scuola, nell'ambito del quale il candidato svolge attività di supporto al Responsabile Unico del Progetto, durante una visita in cantiere si ravvisa che la ditta sub-fornitrice che doveva limitarsi alla mera fornitura di porte antincendio all'appaltatore sta eseguendo anche l'intervento di posa in opera delle stesse. Il candidato indichi le funzioni e le caratteristiche delle porte antincendio nonché i profili di irregolarità, in riferimento ad ogni aspetto delle normative applicabili, relativi al fatto rilevato ed esponga il suo approccio comportamentale nella gestione della situazione in atto, con riferimento al proprio e agli altri ruoli tipici di un appalto pubblico e alle relative responsabilità.
2. Il ruolo degli Istituti delineato nello Statuto della Scuola Sant'Anna.
3. Il candidato effettui una somma di una colonna di dati con excel.
4. Lettura e traduzione del testo evidenziato nel foglio 8.

polytetrafluorethylene

pheric moisture activates the curing agent. They should not be applied in a great thickness, as the outer cured layers do not let enough moisture get through to the middle of a thick mass, making it slow to cure.

polytetrafluorethylene (PTFE), Teflon A fluoropolymer *plastics* with excellent resistance to the most aggressive liquids or environments. It is mainly used as *jointing tape* wrapped round a screw thread and superseded the use of tow, hair, or *jointing compound*. Although of low fire hazard, under intense heating it gives off super-toxic fumes.

polythene See *polyethylene*.

polyurethane (PU) Resilient synthetic resins with excellent stability to light, whether clear or pigmented. The liquid forms are elastic and not subject to hair cracks. They are used in paints and varnish, particularly *floor paint*, as well as in *sealants* for outdoor movement joints. Both *one-part* and *two-part* types are used, but some give off dangerous *isocyanate* fumes. See next entry.

polyurethane foam *Expanded plastics* with excellent properties as *insulation*. It can be made flexible, as in bituminized *sealing strips*, or into rigid board, as in *flush door* cores, or foamed in-situ. It is used in sprayed roof renovation, in which the raw materials expand and set several centimetres thick. Complex roof shapes can be followed and although PU foam is durable it is usually coated with a reflective weather-resistant finishing. In enclosed spaces PU foam is a *fire hazard*, in burning it gives off large amounts of lethal hydrogen cyanide gas. It is no longer allowed in new furniture.

polyvinyl acetate (PVA) Rubbery

synthetic resin which is not fully waterproof in damp conditions, used in interior wood *adhesives*, *emulsion paint*, as a *bonding agent* for plaster on smooth concrete, and also for other backgrounds with high suction.

polyvinyl butyral (PVB) Tough, tear-resistant, clear flexible sheet, used as interlayers in *laminated glass*.

polyvinyl chloride (PVC), vinyl A cheap and versatile *thermoplastic polymer*, so widely used that '*plastics*' often means PVC. It is impervious to water, oil, and many chemicals, and can be a *vapour barrier*. Usual grades of PVC are 'rigid' *unplasticized* (PVC-U), formerly uPVC, rubbery *plasticized*, or chemically modified (MLPVC, CPVC, hiPVC). In fire PVC is almost *non-combustible* and does not burn easily itself, but it melts at a low temperature, and under intense heat (or incineration) gives off poisonous gases. It has many uses: as floor tiles and sheet flooring, rainwater gutters, drain pipes, cold-water service pipes, electrical conduit, coatings over wood window surrounds and foam (or *expanded PVC*). Components or systems made of PVC need to allow for its high *thermal movement*. Pipes have *push-fit* or *solvent-welded joints*, although PVC can also be joined with threaded joints, by heat shrinking, or by *heat fusing*. As cable insulation PVC is slowly giving way to *cross-linked polyethylene*.

polyvinyl fluoride (PVF) A weather-resistant *plastics* used for *organic coating* of steel or aluminium *cladding panels*.

polyvinylidene fluoride (PVF₂) An *organic coating* for metals, factory-applied at high temperature. It is a *fluoropolymer*, highly resistant to chemicals and exposure, but it is easily scratched and needs careful *pro-*

tection during delivery and after installation as *touching-up* on site is done with lower-quality materials.

porrnel A ball-shaped *finial*, e.g. on top of a gate post or stair *newel post*.

ponding Shallow pools of water on a horizontal surface with low spots or irregularities which create a *backfall* and prevent proper drainage. It can occur on a *flat roof*, outdoor *hard surfaces*, or a *screed to falls*.

People's tile A clay *single-lap* roof tile with two waterways. It resembles a *double Roman tile* but with a central ridge that extends only half way up.

poplar Poplar trees should not be allowed near buildings. See *trees*.

popout, knockout A disc in the side of a *plastics accessory box* which is thin enough to be easily pushed out for a *conduit* entry hole.

popping The *blowing* of plaster-work.

pop rivet An aluminium *fastener* with a hollow shank and flat head. It is inserted into a drilled hole, then a steel pin inside the shank is pulled with special pliers, expanding the shank until tight in the hole, when the pin breaks from its necked head with a 'pop' sound. All work is done from one side. Pop rivets are mainly used to join *sheetmetal* and can be removed by drilling out.

pop-up waste A captive plug for a *basin*, operated by a lever or knob.

porcelain enamel A luxurious finish used on cast-iron baths, similar to *vitreous enamel* but fired at a higher temperature.

por Any small hole in a surface, e.g. the sap tubes seen in the end grain of *hardwoods*.

FOLIO 8

Portland stone

por Any small hole in a surface, e.g. the sap tubes seen in the end grain of *hardwoods*.

porosity The quality of being porous, i.e. permeable by fluids. Open holes in the surface of porous materials allow *absorption* of water or vapour, or create *suction* for paint and plaster.

porous pipe A pipe which lets in water, used for *subsoil drains* (C). It can be made of *no-fines concrete* throughout, or with watertight dense concrete in the bottom third.

portal frame A frame of two columns with one horizontal roof beam between them, or two sloping *riflers* that join in the middle. They are usually in concrete or *structural steelwork* and are used for single-storey factories and warehouses with spans of 30 m or more. The column/rafter joints may have *haunches* for extra strength.

Portland cement The most usual *cement* in building, originally so called because when hard its colour and texture were thought to resemble *Portland stone*. It was first patented in England in 1824, shortly after Louis Vicat in France made artificial hydraulic lime, in 1818. Their forerunner was *Roman cement*. The raw materials are a mixture of clay and lime which is heated above 1200°C in a rotary *kiln*. The clinker formed is ground to a fine powder which is used as *ordinary Portland cement*, in *blended cements*, etc.

Portland stone A limestone from Portland on the south coast of England, used for facing important buildings. It weathers well and forms strong contrasts between the parts which get wet and stay white and those which are sheltered and may blacken.

Busta 3

1. Il candidato, che svolge attività di supporto al Responsabile Unico del Progetto, viene contattato dall'appaltatore di un lavoro in corso di nuova costruzione di un edificio della Scuola Sant'Anna, il quale rappresenta la necessità che il personale della ditta subappaltatrice per gli impianti idrico-sanitari (per cui sono in corso da parte dell'Amministrazione le attività propedeutiche all'approvazione del subappalto) abbia accesso in cantiere per anticipare le operazioni preliminari all'avvio dei lavori di competenza, sostenendone l'urgenza per non ritardare i tempi di ultimazione dell'appalto. Il candidato illustri sinteticamente le caratteristiche salienti della tipologia di lavori oggetto del subappalto nonché la natura e le specifiche di tale istituto, nel codice dei contratti e con riferimento al DLgs 81/08, ed esponga il suo approccio comportamentale nella gestione della situazione in atto, con riferimento al proprio e agli altri ruoli tipici di un appalto pubblico.
2. Le funzioni e la composizione del Senato accademico nello Statuto della Scuola Sant'Anna.
3. Il candidato proceda a creare una tabella in word.
4. Lettura e traduzione del testo evidenziato nel foglio 3.

code of practice

5534 does not recommend this practice.

code of practice (C/P) A publication describing accepted *good practice* in a trade, specialist work area, etc. Many former BS CPs are now referred to as BS Codes and published as *British Standards*. Codes of practice are also issued by research bodies, professional institutions, and trade associations. See **Eurocode**.

coffer A deep recess in a *soffit*. See next entry.

coffered slab A deep reinforced-concrete *suspended slab* cast over *pan forms* between which the main bottom bars are laid, forming a grid of ribs. Large spans are possible because of the reduction in *dead weight* (C), but the formwork needs *camber* in both directions. See **waffle slab**.

cog A small projection or *rib*.

coil (1) battery A curved pipe containing hot or cold flowing water, a *heat exchanger* from liquid to air, used in air conditioning as a *hot coil* for heating or a *cold coil* for cooling.

(2) Electrical windings of a *relay* (C), *contactor*, or transformer.

coil heating *Concealed heating* with piped *low-pressure hot water* or electrical *mineral-insulated cables*, common in *underfloor heating*.

coincidence effect A reduction in the *sound insulation* of a sheet material from flexing waves which pass through it more easily than does vibration at right angles to the surface. For a lightweight *double-leaf separating wall* or *for double glazing*, a sound at the 'coincidence-dip' frequency and one octave above may be 5 to 10 *decibels* louder on the other side than other sounds. Thick materials and *damping* reduce the coincidence effect. See BR Digest 143.

coir Natural fibres from the outside of coconuts, used to make doormats.

cold battery A *cold coil*.

cold bridge, heat b., thermal b. A piece of metal, such as a pipe or wall tie (or any other conducting substance), that passes through a wall and carries heat through it. This means that the inner surface of the wall round the pipe or wall tie will in summer be warmer and in winter be so much colder than the remainder of the wall that *condensation* may occur there. *Bridging* of this sort is particularly undesirable in a *cavity wall* or any other type of *discontinuous construction*.

cold cathode lamp A *fluorescent tube* without a heated cathode. It operates at high voltage with low light output and is used for long, complex shapes.

cold coil, c. battery A *heat exchanger* in an air-conditioning system, fed with *chilled water*, to produce cold air. It may need a *condensate pan*.

cold cupboard A *servery* cabinet kept at about 5°C.

cold deck A flat roof construction that works as a *cold roof*, no longer recommended by the *Building Research Establishment*. See **warm deck**.

cold galvanizing A protective coating of *zinc-rich paint* used on steel.

cold roof A roof with its insulation near the ceiling and a ventilated space above it. It can be a *pitched roof*, or a *flat roof*, which is also called a *cold deck*. The main risk of a cold roof is that warm moisture-laden air from the house will enter and as it cools form *condensation*. This is prevented in two ways: by providing a *vapour barrier* at ceiling level (which may interfere with ceiling finishes) and by *ventilation* of the ceiling cavity. See **warm roof**. See also diagram, p. 147.

FOLDIO 3

column splice

cold store Any refrigerated and insulated walk-in for storage at low temperature. It may be either a *coolroom* or a *freezer*.

cold-weather working See **frost protection, winter working**.

collapse The excessive and irregular shrinkage of *kiln-dried hardwoods*, dried too quickly or too much, usually with some weakening of the wood cells, although the overall shape is recovered during *reconditioning*.

collapse grading The stability rating of a *fire door* given by testing.

collapsible form *Formwork* that can fold or telescope inwards to allow *stripping*.

collar (1) A ring or *flange* of asphalt built up round a vertical pipe passing through an asphalt roof to ensure a watertight joint at the pipe.

(2) An enlargement outside a pipe or a reduction within its bore. It is often made to bear on another collar to ensure a tight joint between pipes, as in a *union*.

collar beam, span piece A horizontal tie beam, as in a *collar-beam roof*.

collar-beam roof A traditional framed roof with *common rafters* joined half way up their length by a horizontal tie beam, to give more headroom than a *close couple*.

collar boss A pipe fitting for a *plumbing stack*, with *bosses* that can be drilled out for future connections, such as an extra bath or basin *waste*.

collection In quantity surveying a list of figures and their sum, such as preliminary calculations from *taking-off*, to record minor dimensions and their sources or the sub-total of a page or *trade*.

collector (1) (USA) A drain pipe

connected to a *sewer* (C) or storm drain.

(2) A *solar collector*.

collusive tendering (USA bid collusion, b. rigging) In competitive tendering, an illegal private agreement between tenderers on the prices they each submit; an interference with free competition.

colonnade A row of similar columns joined at the top by beams. Compare *arcade*.

colour (USA color) Any colour can be fully described by its *hue*, *lightness*, and *saturation*, e.g. using *Munsell references*. Colour in *paints* comes mainly from the *pigment*. Black is considered a colour for building purposes, but white is not. See BS 4800 and BS 5252.

colour chart, c. schedule A list of rooms and the colours to be used for decoration.

colour coating *Organic coating*.

colour coding Identification colours for services, *safety signs*, etc., e.g. red for a fire main, green/yellow for an earth wire. See BS 1710.

column An upright structural member, square, round, or rectangular, of reinforced concrete, timber, brickwork, or blockwork, including steel *struttings* (C). Columns carry vertical loads (weight) in compression. They can be *isolated, engaged in, or attached* to a wall. See diagram, p. 90.

column clamp Bars, bolts, or *column jacks* put round *column forms* and tightened to prevent leakage during *concreting*.

columna form, c. box *Formwork* for a reinforced concrete *column*.

column splice A *field splice* in a steel column for a tall building, joined