



INVESTICE DO ROZVOJE VZDĚLÁVÁNÍ

PŘESTAVBY BUDOV ZEDNÍK

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Název a adresa školy:

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NĚMECKÁ VERZE

3.1 Podezdívání základů

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3.1 Untermauern von Gründen

Gründe

- Die Notwendigkeit, Gelände zu reduzieren
- Unerträgliche Boden
- Vertiefung der Keller
- Nebengebäude wird tiefer basieren

Verfahren

- 1) unterstützt den Bau
- 2) Das Ausheben von Boden an der Ferse Basis
- 3) Das Unterarmen in den Teilen in Länge von 1 m und Entfernung von 4 m
 - Voll von Ziegeln, Zement-Mörtel bauen wir auf Säulen ohne Verbindung
 - Mindestlagerfugen
- 4) Isolierung (modifizierte Hart-PVC)
- 5) zugemauert, Verfugen, Eiche oder Stahlkeile
- 6) Ausbau der Federbeine - nach Abschluss

8.1 Dodatečné izolace proti vodě

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8.1 Zusätzlichen Wasserschutz

WTA International – wissenschaftlich-technische Gesellschaft für die Restaurierung und Erhaltung von Denkmälern - gab eine Richtlinie - ihr Einhalten ist eine Garantie für Qualität.

ČSN 0610 : Abdichtung von Gebäuden - feuchtem Mauerwerk

Direkte Methoden - Grundstoffe und indirekten Methoden - zusätzliche

Direkte Methoden

- a) Mechanische Abdichtung eingesetzt
- b) Chemische Abdichtung
- c) elektrophysiologischen Methoden

Indirekte Methoden

- a) Verbesserung Putzsysteme
- b) Luftisolierende Systeme
- c) Entwässerungssysteme

Bei der Auswahl der Methoden - wirtschaftliche Gleichgewicht!

Eine Umfrage von einer Fachfirma durchgeführt kostenlos - Laboranalyse: % Feuchtigkeit, chemische Zusammensetzung des Wassers (Salz, Ausblühungen) und erklärt die Einhaltung der WTA.

Das Unternehmen wird eine optimale Lösung vorzuschlagen, bietet seinen Materialien und jedes Design (bieten mehrere Jahre Garantie - 5 Jahre).

ANGLICKÁ VERZE

1. PURPOSE AND TYPES OF RECONSTRUCTION

Purpose of reconstruction

- Reconstruction and modernization
- Change of purpose
- Improvement of statics, esthetical appearance, safety - facade, ledge
- Improvement of insulation - thermal, acoustic, against water and ground moisture
- Hygienic reasons - the protection of air, water, noise, drainage (dry), hot water
- Extended life time - insulation

Causes of failures of buildings

- Disorders of foundations - soil, tremors, change in load, frost, water
- Defective roof - leaks, pests
- Missing insulation against moisture
- Accident - water, fire
- Natural aging - painting (windows...)
- Improper repair - stretched, weakness, overload
- Overloading

Survey of an object

- Technical report and photographs, static security of the object

Economic sheet

- Based on a survey of the building and its future contribution
- Must be considered: demolish and build a new building or renovate

Disadvantages of reconstructions:

- Dispositions - foundations, bearing walls, structural height of the room
- Existing installations, chimneys
- Labour intensity - difficult to apply mechanization, hazards
- Missing insulation

Advantages of reconstructions:

- Lower price
- Preservation of monuments - architectural ensembles - atmosphere

Project preparation

- Based on a survey, available project documentation and economic considerations
- Effort to design the best solution:

Economy

Statics

Aesthetics

Functionality: operation, comfort - heat, humidity, ventilation, acoustics...

Safety: Implementation - Technical report, use

Ecology: waste disposal, impact on the environment

Drawing processing

- Check of drawings or new survey of the actual condition - Steel tape, optical instruments, electronic equipment - ultrasonic or laser rangefinder
- CSN - technical drawing
- Construction Law - Building permits
- Technical report and drawings
- Statements of authorities - hygiene, fire-fighters, neighbours, environmentalists and eventually conservationists

Marking in drawings

At present conditions

- Construction for pulling down - dotted or yellow new
- New - as for new buildings or in colour:
- Walls - red
- Stone - green
- Concrete - purple
- Wood in the longitudinal direction - ochre

- Metals - blue
- Soil - brown

Preservation of monuments

Preservation zones – town zones

Monuments of UNESCO

(Prague castle, Telč ...)

Pernštýn Square

Objects - churches

Parts on objects - facades, ceilings,
basement



Preservationists approve materials, technologies, and colour solutions of buildings.

QUESTIONS FOR REVISION

1. What are the causes of failures of structures?
2. What is the process of preparing the reconstruction of buildings?

12 DEMOLITIONS OF BUILDINGS

Change in the purpose buildings, reconstruction and modernization - any comments conservationists.

Demolition of whole buildings - **demolition** - based on economic considerations.

The most dangerous activity on construction site - performed by experienced personnel under permanent supervision of a foreman or master accurately processed according to technological progress.

Regulation 324/1990 about **work safety** - demolition and reconstruction work.

1) **Survey of an object**

- Statics of object used in construction, installation, impact on surrounding buildings
- On the basis of the survey, there is developed a detailed process of demolition, which is continuously adjusted according to new findings

2) **Preparatory works**

- In the built-up area - a fence of a height of 1.8 m
- 2 m away from the building (3 m for machinery) or continuous guarding
- Disconnection of gas, water, electricity
- For demolition work is applied a provisionally building site distribution
- Manufacture of extra constructionists - props, shelters over entrances to buildings (2m), tarpaulin
- Rubbish, preparation of irrigation, waste dumps of debris or better containers
- Training of workers protective equipment, a written hand-over of the building site

3) **Demolition**

- Just one method or combination of more methods:
 - a) **By disassembling**
- Slow, but the part of the demolished material can be re-used
- Proceeds from the roof down in the reverse order when during a building
- Metal roofing gutters and downspouts are transported by elevator or on a rope - a ban on throwing down
- Carpenters disassemble a roof truss, a full bond is lowered down and step-by-step disassembled

- The walls tea red down from the auxiliary floors by levers, picks, pick hammers
- The tea red down material is driven away immediately (breaking of the ceiling)
- Swinging of walls is forbidden, and also a use of a jack
- Beamed ceilings - disassembly of floors, select backfill, unnauling of undersides, remove the beam out of a pocket
- Ferro concrete ceilings – gradually by pick hammers and subsequent cutting the reinforcement off by autogen - workers stand on the auxiliary floor above demolishing ceiling construction
- Vaults to girders – they are gradually demolished in all fields along girders (side pressures may roll I-beams out)
- Auxiliary floors, larger vaults are demolished from the end (top) to footings with possible false work (shuttering) of vaults
- Overhanging constructions – cornices, suspension stairs, balconies - to support and withstand

b) By tearing down (cutting down)

- Steel rope wraps for example around pillars between the windows and attaches to the dozer at the required distance, rope angle is 20° → masonry falls outwards

c) By breaking down

- By bucket of a heavy excavator, bodies can be also used - pick hammer, scissors for traverse or Ferro concrete crushers
- Abroad - a large hollow sphere with internal bench balls - hanging on a rope boom



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d) **By explosives**

- Fast, expensive, dangerous to the surroundings
- Provided by specialized contractors
- Surface or recessed explosives into drilled holes - electrical igniting agents

Demolition paid by the owner - the state contribution in the case of public interest.

An application for a permit for removal of the building



QUESTIONS FOR REVISION

Describe demolition methods of buildings with an emphasis on safety regulations.