

# Cost Estimating at Different Stages of the Project

1. Stages of building life cycle
2. The structure of cost
3. Methods of cost estimating
4. Software and use of cost estimates

AEB, Moscow – 2012/11/12 “Managing Investment Projects”  
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# 1. Stages of Building Life Cycle

## Proposal:

- Pre-Investment Phase
- Pre-Design Phase
- Design
- Construction
- Maintenance
- Liquidation

# Pre-investment phase (UNIDO)

- Opportunity studies
- Pre-feasibility study
- Feasibility study
- Appraisal report

## Investment phase

- Negotiations and contracting
- Engineering design
- Construction

# Engineering Phases (Russia)

- Investment Feasibility study
- Purpose Petition
- Land development plan (ГПЗУ)
- Survey and Economic research
- Design documentation
- Bidding documentation
- Detailed design
- Control under construction
- As-built documentation

# Leistungsphasen (HOAI, Deutschland)

1. Grunlagenermittlung
2. Vorplanung
3. Entwurfsplanung
4. Genehmigungsplanung
5. Ausführungsplanung
6. Vorbereitung der Vergabe
7. Mitwirkung bei der Vergabe
8. Bauüberwachung
9. Objektbetreuung und Dokumentation

# Étapes de la construction (France)

- ESQ – Etudes d'esquisse, d'étude de faisabilité
- AVP – Etudes d'avant projet
- APS – Avant-projet sommaire
- APD – Avant-projet définitif
- PRO – Etudes de projet
- DQE – Détail quantitatif estimatif
- ACT – Assistance aux contrats de travaux
- EXE – Etudes et plans d'exécution
- DET – Direction de l'exécution des travaux
- OPC – Ordonnancement, coordination et pilotage du chantier
- AOR – Assistance aux Opérations de Réception

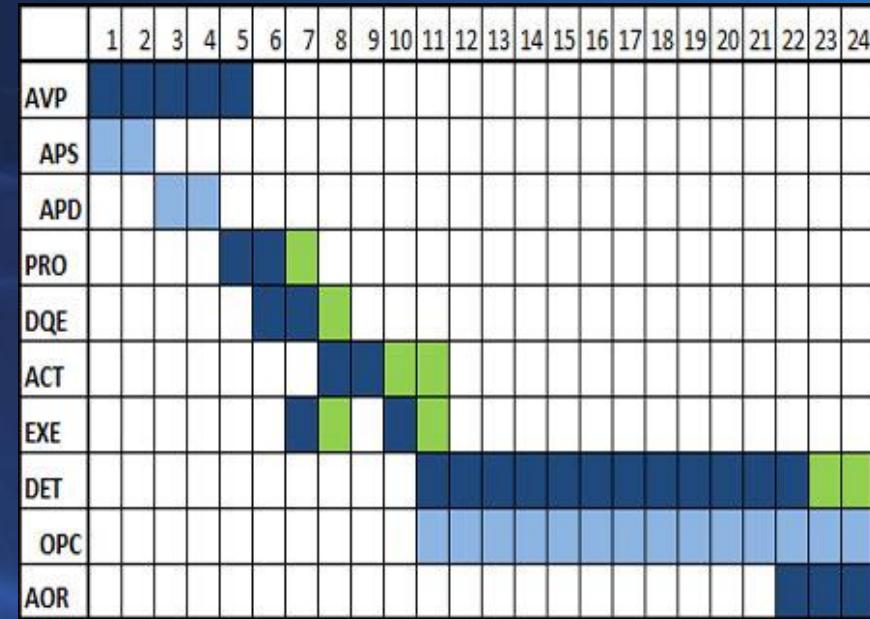
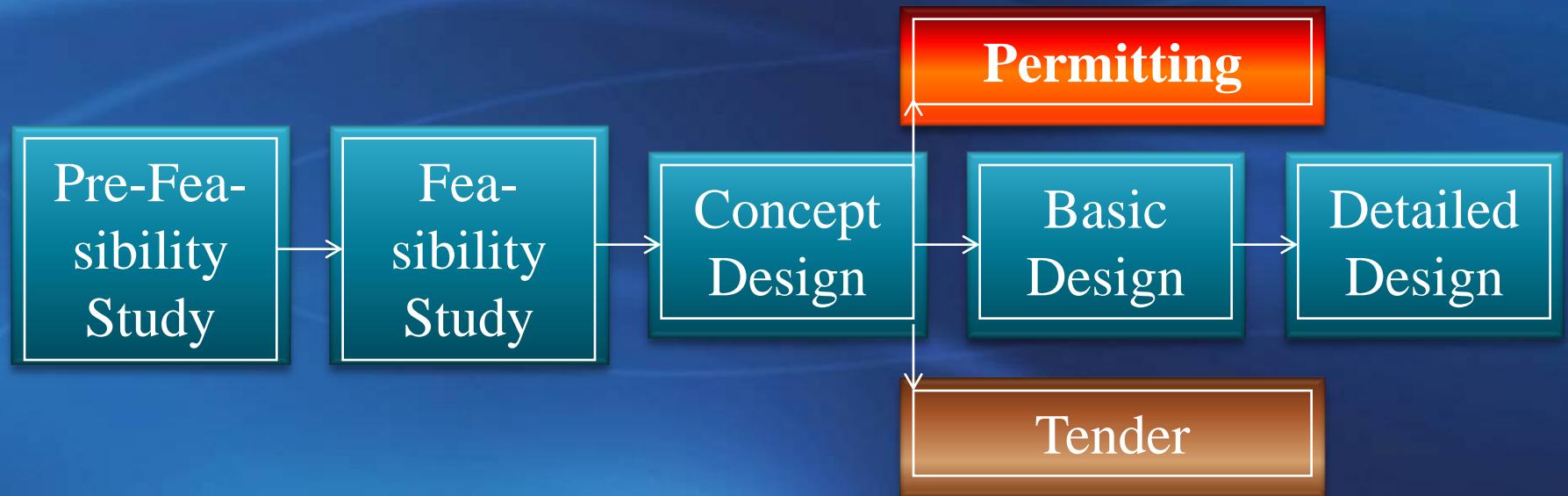
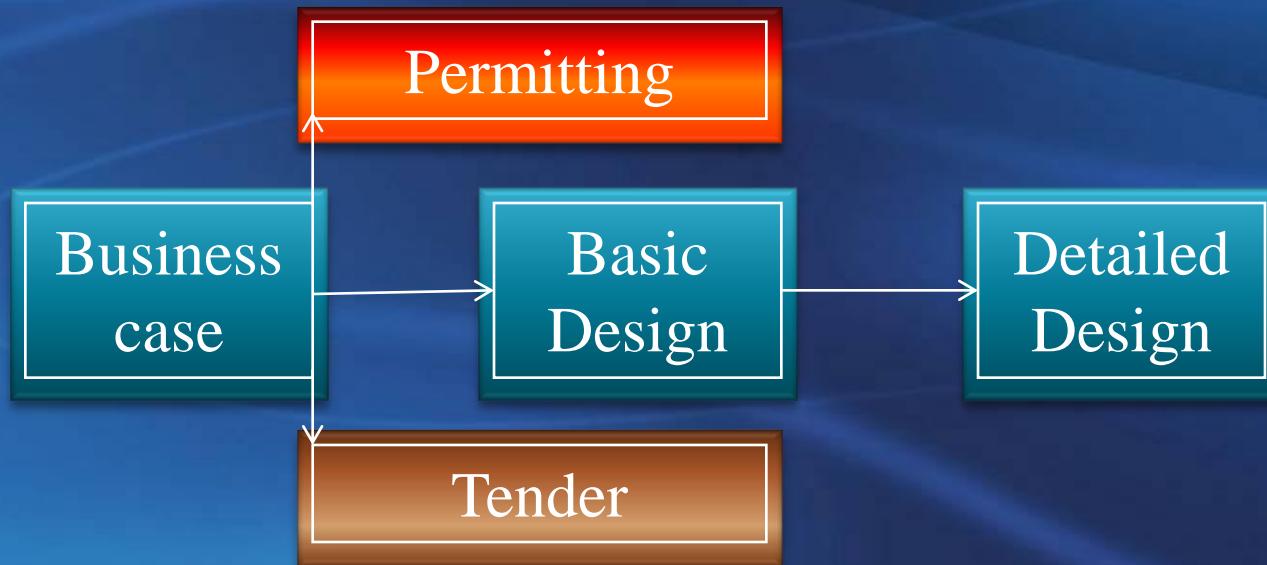


Diagramme des différentes étapes de la construction d'un bâtiment

# Design phases (USA) – large projects



# Design Phases (USA) – small projects



## 2. The Structure of Project Cost

### The Features of Cost Estimates in Russia

- Hierarchy of estimates is established: local, object, and summary estimates.
- The summary estimate has a standard structure (Government Regulation No. 87 of Feb. 2, 2008).
- There are investment and budget funding.
- Projects with budget funding are strictly checked.
- Reserve, overhead cost and contractor profit are normalized in estimates.
- An effort is accepted by standard act based on estimate.
- There is a wide common methodological support.
- There are appropriate software and database.

# The Structure of Project Cost (Russia)

- Construction works
- Erection works (Installation of equipment)
- Process equipment
- Other owner's cost (land, design, commissioning, management, control etc.)
- Contingency (risks)
- VAT

# Summary cost estimate of building

1. Site preparation
2. Main objects
3. Ancillary objects
4. Power facilities
5. Transport and communication facilities
6. Water & wastewater systems, heating & gas systems
7. Landscape and gardening
8. Temporary facilities
9. Other cost
10. Customer control and service
11. Operation personal training
12. Survey and design



# Сводный сметный расчет стоимости строительства

| №  | Номера смет и расчетов | Наименование глав, работ и затрат | Стоимость, млн. руб.: |         |          |             |       |
|--|------------------------|-----------------------------------|-----------------------|---------|----------|-------------|-------|
|  |                        |                                   | строит. работы        | монтаж. | обо-руд. | проч. затр. | всего |
|  |                        | Глава 1. Подготовка территории... | 32,11                 |         |          | 41,12       | 73,23 |
| <b>Глава 2. Основные объекты строительства</b>                 |                        |                                   |                       |         |          |             |       |
| 2  | 002                    | главный корпус                    | 36,45                 | 12,78   | 44,10    | 1,26        | 94,59 |
| <b>Глава 3. Объекты подсобного и обслуживающего назначения</b> |                        |                                   |                       |         |          |             |       |
| 5  | 005                    | вспомогат. корпус                 | 9,34                  | 2,39    | 6,21     | 0,51        | 18,45 |
|  |                        | ...                               |                       |         |          |             |       |
| <b>Глава 8. Временные здания и соор.</b>                       |                        |                                   |                       |         |          |             |       |
|  |                        |                                   | 1,07                  | 0,22    |          |             | 1,29  |
| <b>Глава 9. Прочие работы и затраты</b>                        |                        |                                   |                       |         |          |             |       |
|  |                        |                                   |                       |         |          |             |       |
|  |                        | ...                               |                       |         |          |             |       |

# The Structure of Construction Works Cost

- **Direct cost** (of contractor)

- Material for construction

- Equipment

- Labor

- **Indirect cost** (of contractor)

- Overhead cost

- Profit

- Mobilization

- Additional expenses in winter

# Structure of Project Cost (AACEI – The Association for the Advancement of Cost Engineering)

- 10 Pre-construction costs
- 20 Direct costs
- 30 Indirect costs
- 40 Owner's costs
- 50 Supplementary costs
- 60 Financial costs \_\_\_\_\_.
- 70-99 Operation cost

# Structure of Estimate's Parts (AACEI)

- 10 Pre-construction works: Land and land rights, site permit, licensing, survey etc.
- 20 Direct costs: Construction, equipment and installation; land preparation, facilities and infrastructure.
- 30 Indirect costs: Overhead costs, control, commissioning works and start-up, design services, management etc.

## Structure of Estimate's Parts (AACEI)

- 40 Owner's costs: Staff recruiting and training, staff housing facilities, salary etc.
- 50 Supplementary costs: transportation, spare parts, taxes, insurance, initial raw stock, decommission etc.
- 60 Financial costs: Escalation, fees and royalty, interest during construction.

# Baukosten (DIN-276-1)

- 100 Grundstück (затраты на земельный участок)
- 200 Herrichten und Erschließen (подготовка и инфраструктура)
- 300 Bauwerk: Baukonstruktionen (строительные конструкции и работы)
- 400 Bauwerk: Technische anlagen (технические устройства)
- 500 Außenanlagen (открытые площадки)
- 600 Ausstattung und Kunstwerke (обстановка и элементы искусства)
- 700 Baunebenkosten (прочие затраты)

# 3. Methods of Cost Estimating

- «Top-Down»:
  - Expert procedure
  - Analog method
  - Parametric method
- «Bottom-Up»:
  - Detailed calculation of direct cost
  - Detailed calculation of indirect cost

# Parametric method, analog method

$$C = C_0 \left( \frac{F}{F_0} \right)^m k_t \pm \Delta C$$

$C, C_0$  – cost of the object, cost of the analog

$F, F_0$  – main indexes of the object and the analog

$m = 0,5 \dots 0,8$

$k_t$  – time factor

$\Delta C$  – additional cost

# Calculation on main building characters

$$C = \sum_i (F_i P_{Fi})$$

C – cost of the object

$F_i$  – main characters of the object (land area, built-up area,  
construction volume etc.)

$P_{Fi}$  – specific price

# Calculation on structural elements

$$C = \sum_i (F_i P_{Fi})$$

C – cost of the object

$F_i$  – characters of structural elements (area of foundation, amount of excavation, length of columns, area of walls and openings etc.)

$P_{Fi}$  – specific price

# Calculation on unit prices

$$C = \sum_i (L_i P_{Li}) k_b k_f k_r k_p$$

C – cost of object

$L_i$  – amount of construction (work)

$P_{Li}$  – detailed unit price

$k_b$  – factor of building site

$k_f$  – factor for management

$k_r$  – factor of risks

$k_p$  – factor for profit

# Indirect cost factor

$$k_b = 1 + \frac{\sum (T_j P_{Tj})}{\sum_i (L_i P_{Li})}$$

$k_b$  – indirect cost factor

$L_i$  – amount of construction (work)

$P_{Li}$  – unit price

$T_j$  – time of construction (months)

$P_{Tj}$  – indirect cost for a month

# Сметные нормативы (Россия)

- Укрупненные нормативы цены строительства – НЦС-2011, НЦС-2012
- Государственные сметные элементные нормы ГЭСН-2001, ГЭСНм-2001, ГЭСНп-2001
- Федеральные единичные расценки ФЕР-2001, ФЕРм-2001, ФЕРп-2001
- Территориальные единичные расценки ТЕР-2001, ТЕРм-2001, ТЕРп-2001
- Территориальные сметные нормы г. Москвы ТСН-2001

# ФЕР-2001, ГЭСН-2001

ГОСУДАРСТВЕННЫЕ СМЕТНЫЕ НОРМАТИВЫ  
РОССИЙСКОЙ ФЕДЕРАЦИИ

ГЭСН с 11-06-01-2001

ГОСУДАРСТВЕННЫЕ  
ЭЛЕМЕНТАРНЫЕ СМЕТНЫЕ НОРМАТЫ  
ПА РАБОТЫ ПО СОДЕРЖАНИЮ  
АВТОМОБИЛЬНЫХ ДОРОГ ОБЩЕГО  
ПОЛЬЗОВАНИЯ И МОСТОВЫХ  
СООРУЖЕНИЙ НА НИХ

ГЭСНс-2001

Сборник № 1

ИЗДАНИЕ ОФИЦИАЛЬНОЕ

Москва 2001

| Номера расценок | Наименование и характеристика строительных работ и конструкций | Прямые затраты, руб. | в том числе, руб.               |                    |                                |           | Затраты труда рабочих-строителей, чел.-ч. |  |
|-----------------|--|----------------------|---------------------------------|--------------------|--------------------------------|-----------|---|--|
|                 |  |                      | оплата труда рабочих-строителей | эксплуатация машин |                                | материалы |   |  |
|                 |  |                      |                                 | всего              | в т.ч. оплата труда машинистов |           |   |  |

ТАБЛИЦА 08-02-001. Кладка стен из кирпича

Измеритель: м3 кладки

#### Кладка стен кирпичных наружных простых при высоте этажа

|              |           |        |       |       |      |        |      |
|--------------|-----------|--------|-------|-------|------|--------|------|
| 08-02-001-01 | до 4 м    | 890,83 | 44,87 | 34,56 | 4,23 | 811,40 | 5,40 |
| 08-02-001-02 | свыше 4 м | 885,35 | 43,71 | 30,24 | 3,70 | 811,40 | 5,26 |

#### Кладка стен кирпичных наружных средней сложности при высоте этажа

|              |           |        |       |       |      |        |      |
|--------------|-----------|--------|-------|-------|------|--------|------|
| 08-02-001-03 | до 4 м    | 912,00 | 49,53 | 34,56 | 4,23 | 827,91 | 5,66 |
| 08-02-001-04 | свыше 4 м | 906,45 | 48,30 | 30,24 | 3,70 | 827,91 | 5,52 |

#### Кладка стен кирпичных наружных сложных при высоте этажа

|              |           |        |       |       |      |        |      |
|--------------|-----------|--------|-------|-------|------|--------|------|
| 08-02-001-05 | до 4 м    | 926,00 | 57,75 | 34,56 | 4,23 | 833,69 | 6,21 |
| 08-02-001-06 | свыше 4 м | 920,38 | 56,45 | 30,24 | 3,70 | 833,69 | 6,07 |

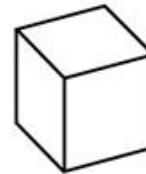
#### Кладка стен кирпичных внутренних при высоте этажа

|              |                                |        |       |       |      |        |      |
|--------------|--------------------------------|--------|-------|-------|------|--------|------|
| 08-02-001-07 | до 4 м                         | 893,37 | 43,30 | 34,56 | 4,23 | 815,51 | 5,21 |
| 08-02-001-08 | свыше 4 м                      | 887,72 | 41,97 | 30,24 | 3,70 | 815,51 | 5,05 |
| 08-02-001-09 | Кладка стен приямков и каналов | 913,24 | 58,83 | 31,10 | 3,81 | 823,31 | 7,08 |

# BKI Baukosten, Teil 1

Mehrfamilienhäuser,  
energiesparend,  
ökologisch

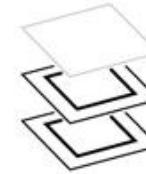
Kostenkennwerte für die Kosten des Bauwerks (Kostengruppen 300+400 nach DIN 276)



**1.500 €/NE**  
von 1.280 bis 1.730  
NE: Wohnfläche



**305 €/m³ BRI**  
von 275 bis 350



**860 €/m² BGF**  
von 800 bis 960

**1.250 €/m² NF**  
von 1.100 bis 1.420

## Objektbeispiele



6100-839



6100-795



6100-788



6100-684



6100-683



6100-724

# BKI Baukosten, Teil 2

Bürogebäude,  
mittlerer Standard

|   | Kostengruppen | von           | €/Einheit | bis  | KG an 300+400 |
|---|---------------|---------------|-----------|------|---------------|
| <b>310 Baugrube</b>                               |               |               |           |      |               |
| 311 Baugrubenherstellung [m <sup>3</sup> ]        | 12,00         | <b>22,00</b>  | 39,00     | 1,1% |               |
| 312 Baugrubenumschließung [m <sup>2</sup> ]       | 80,00         | <b>252,00</b> | 424,00    | 0,0% |               |
| 313 Wasserhaltung [m <sup>2</sup> ]               | 3,20          | <b>11,00</b>  | 44,00     | 0,0% |               |
| 319 Baugrube, sonstiges [m <sup>3</sup> ]         | 1,20          | <b>3,00</b>   | 4,70      | 0,0% |               |
| <b>320 Gründung</b>                               |               |               |           |      |               |
| 321 Baugrundverbesserung [m <sup>2</sup> ]        | 10,00         | <b>26,00</b>  | 44,00     | 0,1% |               |
| 322 Flachgründungen [m <sup>2</sup> ]             | 42,00         | <b>93,00</b>  | 233,00    | 1,8% |               |
| 323 Tiefgründungen [m <sup>2</sup> ]              | 156,00        | <b>382,00</b> | 622,00    | 0,6% |               |
| 324 Unterböden und Bodenplatten [m <sup>2</sup> ] | 46,00         | <b>76,00</b>  | 106,00    | 1,9% |               |
| 325 Bodenbeläge [m <sup>2</sup> ]                 | 65,00         | <b>101,00</b> | 138,00    | 2,3% |               |
| 326 Bauwerksabdichtungen [m <sup>2</sup> ]        | 13,00         | <b>26,00</b>  | 47,00     | 0,6% |               |
| 327 Dränagen [m <sup>2</sup> ]                    | 4,20          | <b>8,80</b>   | 16,00     | 0,1% |               |
| 329 Gründung, sonstiges [m <sup>2</sup> ]         | –             | <b>6,90</b>   | –         | 0,0% |               |
| <b>330 Außenwände</b>                             |               |               |           |      |               |
| 331 Tragende Außenwände [m <sup>2</sup> ]         | 110,00        | <b>152,00</b> | 235,00    | 4,6% |               |
| 332 Nichttragende Außenwände [m <sup>2</sup> ]    | 74,00         | <b>151,00</b> | 265,00    | 0,3% |               |
| 333 Außenstützen [m]                              | 143,00        | <b>214,00</b> | 412,00    | 0,5% |               |
| 334 Außentüren und -fenster [m <sup>2</sup> ]     | 368,00        | <b>561,00</b> | 945,00    | 6,3% |               |
| 335 Außenwandbekleidungen außen [m <sup>2</sup> ] | 84,00         | <b>149,00</b> | 366,00    | 4,7% |               |
| 336 Außenwandbekleidungen innen [m <sup>2</sup> ] | 15,00         | <b>29,00</b>  | 53,00     | 1,0% |               |
| 337 Elementierte Außenwände [m <sup>2</sup> ]     | 449,00        | <b>631,00</b> | 824,00    | 5,0% |               |
| 338 Sonnenschutz [m <sup>2</sup> ]                | 107,00        | <b>200,00</b> | 370,00    | 1,4% |               |
| 339 Außenwände, sonstiges [m <sup>2</sup> ]       | 5,90          | <b>23,00</b>  | 61,00     | 0,8% |               |

# BKI Baukosten, Teil 3

LB 008  
Wasserhaltungs-  
arbeiten

008

| Wasserhaltungsarbeiten |   |         | Preise €   |            |                     |            |            |
|------------------------|---|---------|------------|------------|---------------------|------------|------------|
| Nr.                    | Positionen                              | Einheit | min<br>min | von<br>von | brutto ø<br>netto ø | bis<br>bis | max<br>max |
| <b>1</b>               | Pumpensumpf herstellen                  | St      | 117        | 269        | 368                 | 486        | 1.209      |
|                        |   |         | 98         | 226        | 309                 | 408        | 1.016      |
| <b>2</b>               | Tauchpumpe                              | St      | 77         | 221        | 249                 | 345        | 525        |
|                        |   |         | 65         | 186        | 209                 | 290        | 441        |
| <b>3</b>               | Betrieb der Tauchpumpe                  | h       | 0,6        | 3,7        | 4,8                 | 6,8        | 12         |
|                        |   |         | 0,5        | 3,1        | 4,0                 | 5,7        | 10         |
| <b>4</b>               | Pumpe                                   | St      | 87         | -          | 326                 | -          | 722        |
|                        |   |         | 73         | -          | 274                 | -          | 607        |
| <b>5</b>               | Betrieb der Pumpe                       | h       | 2          | -          | 11                  | -          | 29         |
|                        |   |         | 2          | -          | 9                   | -          | 24         |
| <b>6</b>               | Brunnenschacht für Grundwasserabsenkung | St      | 1.940      | -          | 2.526               | -          | 3.113      |
|                        |   |         | 1.630      | -          | 2.123               | -          | 2.616      |
| <b>7</b>               | Druckrohrleitung                        | m       | 37         | 55         | 58                  | 65         | 83         |
|                        |   |         | 31         | 46         | 49                  | 55         | 70         |
| <b>8</b>               | Saugschläuche, -leitungen bis DN100     | m       | 0,6        | 6,4        | 9,4                 | 13         | 20         |
|                        |   |         | 0,5        | 5,4        | 7,9                 | 11         | 17         |
| <b>9</b>               | Stromerzeuger, 10-20KW                  | St      | 87         | -          | 1.861               | -          | 3.752      |
|                        |   |         | 73         | -          | 1.564               | -          | 3.153      |
| <b>10</b>              | Absetzbecken                            | St      | 1.058      | -          | 1.685               | -          | 2.313      |
|                        |   |         | 889        | -          | 1.416               | -          | 1.944      |

| Nr. | Mustertext            | Menge, Einheit | EP brutto, € |
|-----|-----------------------|----------------|--------------|
|     | • Kurztext / Langtext |                | EP netto, €  |

## 1 Pumpensumpf herstellen

### Pumpensumpf aus Betonfertigteilringen

Pumpensumpf aus Betonfertigteilringen herstellen, vorhalten während der gesamten Bauzeit und komplett wieder entfernen. Pumpensumpf innerhalb von Baugruben, Tiefe bis 3,00m, lichter Sohlenquerschnitt bis 1,00m<sup>2</sup>. Leistung, inkl. erforderliche Bodenmassen (Bodenklasse 3 / 4 / 5) ausheben, seitlich lagern und nach Demontage des Pumpensumpfs wieder verfüllen. [St]

| min | von | netto € | bis | max   | Positionsnummer |
|-----|-----|---------|-----|-------|-----------------|
| 98  | 226 | 309     | 408 | 1.016 | 008.000.002     |

## 02 41 Demolition

### 02 41 19 – Selective Structure Demolition

| 02 41 19.23 Selective Demolition, Rubbish Handling |   | Crew   | Daily Output | Labor-Hours | Unit   | Material | 2010 Bare Costs |       | Total   |       |
|--|---|--------|--------------|-------------|--------|----------|-----------------|-------|---------|-------|
|  |   |        |              |             |        | Labor    | Equipment       | Total | Ind O&P |       |
| 2210   | Over 100' haul, add per 100 L.F., hand carried          | 2 Clab | 35.50        | .451        | C.Y.   |          | 14.90           |       | 14.90   | 23    |
| 2215   | Wheeled   |        | 54           | .296        |        |          | 9.80            |       | 9.80    | 15.15 |
| 2220   | For each additional flight of stairs, 5 risers          |        | 550          | .029        | Flight |          | .96             |       | .96     | 1.49  |
| 2225   | 6 – 10 risers   |        | 275          | .058        |        |          | 1.93            |       | 1.93    | 2.97  |
| 2230   | 11-20 risers  |        | 138          | .116        |        |          | 3.84            |       | 3.84    | 5.90  |
| 2235   | 21 – 40 risers  |        | 69           | .232        |        |          | 7.70            |       | 7.70    | 11.85 |
| 3000   | Loading & trucking, including 2 mile haul, chute loaded | B-16   | 45           | .711        | C.Y.   |          | 24              | 14.85 | 38.85   | 53.50 |
| 3040   | Hand loading truck, 50' haul                            | "      | 48           | .667        |        |          | 22.50           | 13.90 | 36.40   | 50    |
| 3080   | Machine loading truck                                   | B-17   | 120          | .267        |        |          | 9.40            | 6.15  | 15.55   | 21    |
| 5000   | Haul, per mile, up to 8 C.Y. truck                      | B-34B  | 1165         | .007        |        |          | .23             | .57   | .80     | .98   |
| 5100   | Over 8 C.Y. truck                                       | "      | 1550         | .005        |        |          | .17             | .43   | .60     | .73   |

### 02 41 19.25 Selective Demolition, Saw Cutting

|      |  |            |        |      |      |      |     |      |      |      |      |
|------|--|------------|--------|------|------|------|-----|------|------|------|------|
| 0010 | <b>SELECTIVE DEMOLITION, SAW CUTTING</b>               | R024119-10 |        |      |      |      |     |      |      |      |      |
| 0015 | Asphalt, up to 3" deep                                 |            | B-89   | 1050 | .015 | L.F. | .41 | .56  | .45  | 1.42 | 1.80 |
| 0020 | Each additional inch of depth                          |            | "      | 1800 | .009 |      | .09 | .33  | .26  | .68  | .88  |
| 1200 | Masonry walls, hydraulic saw, brick, per inch of depth |            | B-89B  | 300  | .053 |      | .43 | 1.96 | 2.81 | 5.20 | 6.50 |
| 1220 | Block walls, solid, per inch of depth                  |            | "      | 250  | .064 |      | .43 | 2.35 | 3.37 | 6.15 | 7.75 |
| 2000 | Brick or masonry w/hand held saw, per inch of depth    |            | A-1    | 125  | .064 |      | .34 | 2.12 | .59  | 3.05 | 4.30 |
| 5000 | Wood sheathing to 1" thick, on walls                   |            | 1 Corp | 200  | .040 |      |     | 1.66 |      | 1.66 | 2.56 |
| 5020 | On roof  |            | "      | 250  | .032 |      |     | 1.33 |      | 1.33 | 2.05 |

### 02 41 19.27 Selective Demolition, Torch Cutting

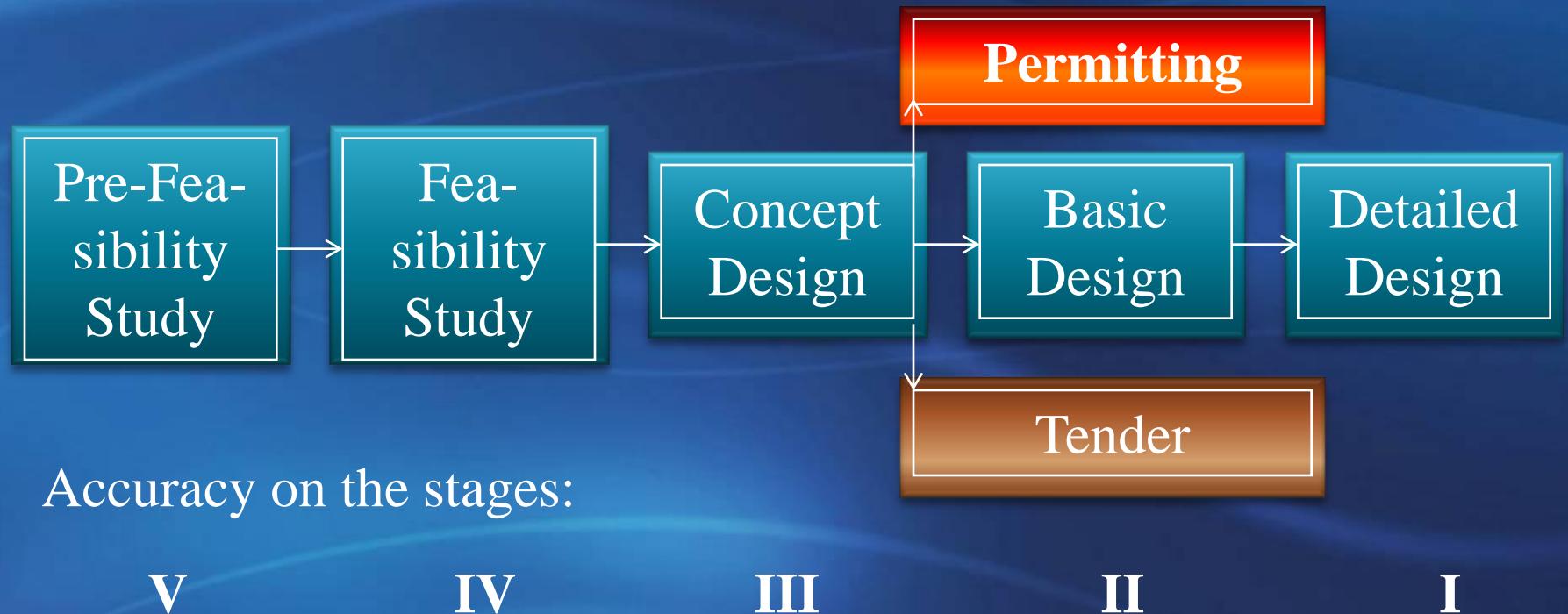
|      |   |            |        |     |       |      |     |       |  |       |      |
|------|---|------------|--------|-----|-------|------|-----|-------|--|-------|------|
| 0010 | <b>SELECTIVE DEMOLITION, TORCH CUTTING</b>      | R024119-10 |        |     |       |      |     |       |  |       |      |
| 0020 | Steel, 1" thick plate                           |            | 1 Clab | 360 | .022  | L.F. | .23 | .74   |  | .97   | 1.38 |
| 0040 | 1" diameter bar                                 |            | "      | 210 | .038  | Ea.  |     | 1.26  |  | 1.26  | 1.95 |
| 1000 | Oxygen lance cutting, reinforced concrete walls |            |        |     |       |      |     |       |  |       |      |
| 1040 | 12" to 16" thick walls                          |            | 1 Clab | 10  | .800  | L.F. |     | 26.50 |  | 26.50 | 41   |
| 1080 | 24" thick walls                                 |            | "      | 6   | 1.333 | "    |     | 44    |  | 44    | 68   |

# Accuracy of estimates

## (Estimate classification - AACEI)

| Estimate class | Accuracy range, % - low | Accuracy range, % - high | Contingency, % |
|----------------|-------------------------|--------------------------|----------------|
| V              | -20...+30               | -50...+100               | -              |
| IV             | -15...+20               | -30...+50                | 30...50        |
| III            | -10...+10               | -20...+30                | 15...30        |
| II             | -5...+5                 | -15...+20                | 10...20        |
| I              | -3...+3                 | -10...+15                | 5...10         |

# Classification system (AACEI)



## **4. Software and use of cost estimates**

## Specialized software (e. g.)

Госстройсмета (Россия)

Гранд-смета (Россия)

Смета.ру (Россия)

SwiftEstimator (Marshall & Swift, UK)

Sidoun WinAVA (Sidoun GmbH, BRD)

EPSOS ÉTUDE PRIX (France)

Success Estimator, Enterprise (U.S.Cost, USA)

etc.

# Гранд-смета (Россия)

ГРАНД-Смета, версия 5.0.1 - ООО Центр "Гранд"

Главная Вид Документ Данные Ресурсы Экспертиза Выполнение Справка

Смета Раздел Доп. информация Не учитывать Уровень базисных цен Найти в норм. базе

База Сборник Тех.часть Позиция Заголовок Подгруппа Вид документа Итоги Способ расчета Итоги по позиции

Перейти Вставка строки Работа с позицией Представление информации

Параметры Справочники Документ

1 Кладка стен наружных простых при высоте этажа до 4 м из кирпича: керамического одинарного

6-й Всероссийский семинар, 9 октября 2009 года ФЕР08. Конструкции из кирпича и блоков ООО Центр "Гранд" ФЕР06. Бетонные и ж/б конструкции монолитные

| №<br>п.п                      | Обоснование   | Наименование  | Ед. изм.       | Кол-во                  |            |          | Стоимость единицы |                        |            |            | Всего        | ОСНОВНАЯ |
|-------------------------------|---|---|----------------|-------------------------|------------|----------|-------------------|------------------------|------------|------------|--------------|----------|
|                               |   |   |                | на ед.                  | всего      | Всего    | В том числе       |                        |            |            |              |          |
|                               |   |   |                |                         |            |          | ОСНОВ. з.п.       | ЭКСПЛ. МАШ.            | З.П. МЕХ.  | МАТЕР.     |              |          |
| <b>Раздел 1. Новый Раздел</b> |   |   |                |                         |            |          |                   |                        |            |            |              |          |
| 1                             | <b>ФЕР08-02-001-01</b><br><b>Кобщ</b>               | Кладка стен наружных простых при высоте этажа до 4 м из кирпича: керамического одинарного   | 1 м3 кладки    | 1560<br>120*0,65*2,5*8  | 215,68     | 51,60    | 43,20             | 5,29                   | 120,88     | 336 461,58 | 8            |          |
|                               |   | 200,31 = 890,83 - 0,394 x 1 752,60  |                |                         |            |          |                   |                        |            |            |              |          |
|                               | 1-2-7   | Затраты труда рабочих (ср 2,7)  | чел.час        | 6,21                    | 9687,6     | 8,30     | 8,30              |                        |            | 80 402,40  | 8            |          |
|                               | 2   | Затраты труда машинистов  | чел.час        | 0,5                     | 780        | 0,00     |                   |                        | 0,00       | 0,00       |              |          |
|                               | 020129  | Краны башенные при работе на д...   | маш.-ч         | 0,4                     | 624        | 86,40    |                   | 86,40                  | 13,50      | 67 392,00  |              |          |
|                               | 102-0026  | Пиломатериалы хвойных пород ...   | м3             | 0,0005                  | 0,78       | 1 056,00 |                   |                        |            | 1 056,00   | 826,80       |          |
|                               | K=...   | 402-0012 Раствор готовый кладочный цеме...  | м3             | 0,24                    | 374,4      | 497,00   |                   |                        |            | 497,00     | 186 076,80   |          |
|                               | Уд  | 404-0005 Кирпич керамический одинарный...   | 1000 шт.       | 0,394                   | 614,6      | 1 752,60 |                   |                        |            | 1 752,60   | 1 077 211,20 |          |
|                               | 411-0001  | Вода  | м3             | 0,44                    | 686,4      | 2,44     |                   |                        |            | 2,44       | 1 669,20     |          |
| 1.1                           | <b>ФССЦ-404-0006</b><br><b>Кобщ</b>                 | Кирпич керамический одинарный, размером 250x120x65 мм, марка 125  | 1000 шт.       | 614,6<br>флакрич        | 1 863,37   |          |                   |                        |            | 1 863,37   | 1 145 227,20 |          |
| 3                             | <b>ТЕР10-01-047-04</b><br><b>K=..., Кискл, Кобщ</b> | Установка блоков из ПВХ в наружных и внутренних дверных проемах в перегородках и деревянных нерубленых стенах площадью проема до 3 м2 | 100 м2 проемов | 2                       | 307 861,05 | 2 302,10 | 2 034,31          | 15,18                  | 303 524,64 | 615 722,11 |              |          |
| 4                             | <b>ТЕР10-01-039-03</b><br><b>Кобщ</b>               | Установка блоков в наружных и внутренних дверных проемах в перегородках и деревянных нерубленых стенах площадью проема до 3 м2        | 100 м2 проемов | 0,945<br>2,1*1,8*25/100 | 14 913,79  | 1 426,38 | 538,59            |                        |            | 12 948,81  | 14 093,53    |          |
| H                             | 101-9411  | Скобяные изделия  | компл          | 0                       | 0          | 0,00     |                   |                        |            | 0,00       | 0,00         |          |
| Кемеровская область 1 зона    |   |   |                | Баз.-индексный расчет   |            |          |                   | Итого: 45 521 157,50р. |            |            |              |          |

# EPSOS (France)

Report Preview

File Page Zoom 12:38:08

Page : 1/37

Entreprise : Date : 01/07/2012-12:38

Affaire : affaire\_construction\_maison\_ind

Référence : AFF\_const\_maison

Client :

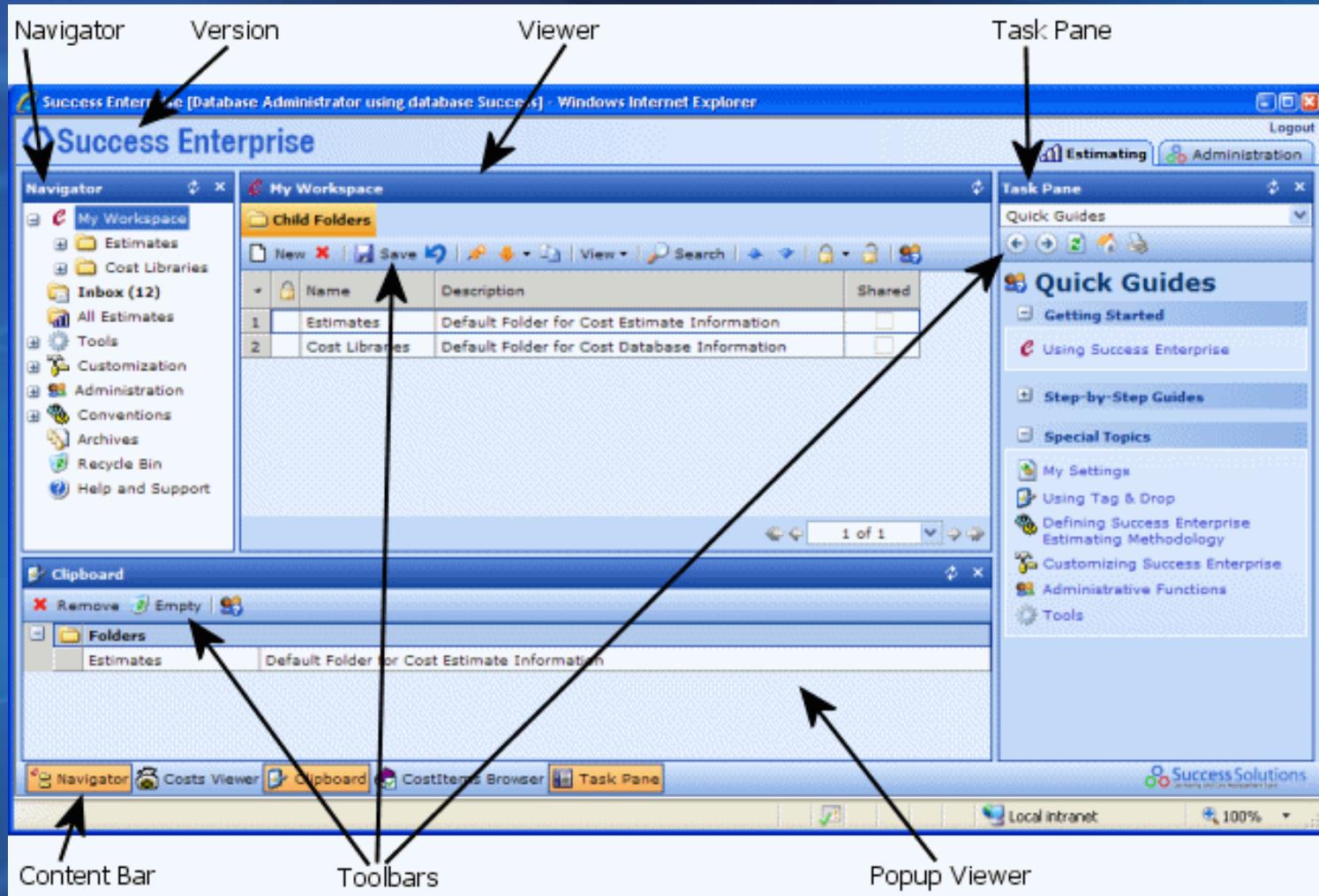
Page : 1/37

Monnaie : Euro

**Sous - Détail de Prix de vente / ouvrage**

| Désignation              | Nbre          | Unité | Qte  | Main d'œuvre |       | Matériel        |       | Fournitures |       | Travaux propres |       | Divers   |       | STR    |       |
|--------------------------|---------------|-------|------|--------------|-------|-----------------|-------|-------------|-------|-----------------|-------|----------|-------|--------|-------|
|                          |               |       |      | PU           | Total | PU              | Total | PU          | Total | PU              | Total | PU       | Total | PU     | Total |
| Manoëuvre                | 1,00          | h     | 1,00 | 23,33        | 23,33 | 0,00            | 0,00  | 0,00        | 0,00  | 23,33           | 23,33 | 0,00     | 0,00  | 0,00   | 0,00  |
| Poseur                   | 1,00          | h     | 1,00 | 32,00        | 32,00 | 0,00            | 0,00  | 0,00        | 0,00  | 32,00           | 32,00 | 0,00     | 0,00  | 0,00   | 0,00  |
| Total/Unité Ouvrage      |               |       |      | 55,33        | 55,33 | 0,00            | 0,00  | 0,00        | 0,00  | 55,33           | 55,33 | 0,00     | 0,00  | 0,00   | 0,00  |
| Total Déboursés secs:    |               |       |      | Taux (%)     |       | Travaux propres |       | Taux(%)     |       | Sous-Traitants  |       | Taux (%) |       | Divers |       |
|                          |               |       |      |              |       | 553,30          |       |             |       | 0,00            |       |          |       |        |       |
| Frais commun de chantier |               |       |      | 437,07       |       |                 |       |             |       |                 |       |          |       |        |       |
| Frais généraux           | 2,00%         |       |      | 19,01        |       | 5,00%           |       | 0,00        |       | 3,00%           |       | 0,00     |       |        |       |
| Aléas                    | 4,00%         |       |      | 39,61        |       | 5,00%           |       | 0,00        |       | 6,00%           |       | 0,00     |       |        |       |
| Bénéfices                | 7,00%         |       |      | 68,33        |       | 5,00%           |       | 0,00        |       | 9,00%           |       | 0,00     |       |        |       |
| Total prix de vente :    | 1 119,12 Euro |       |      |              |       |                 |       |             |       |                 |       |          |       |        |       |
| Prix de vente Unitaire : | 111,91 Euro   |       |      |              |       |                 |       |             |       |                 |       |          |       |        |       |

# Success Enterprise/Estimator (USA)



# Database

The screenshot shows a software application window titled 'Walls' under 'Costs'. The main area displays a table of line items. The columns are: Code, Description, Quantity, Unit of Measure, Labor, Equipment, Material, and Cost. Two entries are visible:

| Code      | Description                            | Quantity | Unit of Measure | Labor: [768.95] | Equipment: [.00] | Material: [1,026.00] | Cost: [1,794.95] |
|-----------|--|----------|-----------------|-----------------|------------------|----------------------|------------------|
| 032170700 | Reinforcing In Place, Walls, #3 To #7  | .00      | TON             | 439.40          |                  | 513.00               | 952.40           |
| 032170750 | Reinforcing In Place, Walls, #8 To #18 | .00      | TON             | 329.55          |                  | 513.00               | 842.55           |

# Estimate

The screenshot shows a software application window displaying a detailed estimate. The table has columns for Line Number, Task ID, Description, Quantity, Unit of Measure, Labor cost, Equipment cost, Material cost, and Total Cost. The data includes various project expenses such as office costs, insurance, labor for different tasks, and mobilization.

| #  | Task ID   | Description                       | Quantity | Unit of Measure | Labor: [6,296.00] | Equipment: [5,045.00] | Material: [15,574.50] | Cost: [26,915.50] |
|----|-----------|-----------------------------------|----------|-----------------|-------------------|-----------------------|-----------------------|-------------------|
| 1  | 010200001 | HOME OFFICE COST                  | 1.00     | LS              |                   |                       | 15,000.00             | 15,000.00         |
| 2  | 010200002 | INSURANCE/SOC.SEC./TAX            | 1.00     | LS              | 3,011.00          |                       | 97.00                 | 3,108.00          |
| 3  | 010200003 | MISC. INSURANCE                   | 600.00   | EA              |                   |                       | 2.50                  | 2.50              |
| 4  | 010500001 | PROJECT SUPERINTENDENT            | 6.00     | LS              | 2,200.00          |                       |                       | 2,200.00          |
| 5  | 010500002 | PROJECT LAYOUT TEAM               | 10.00    | LS              | 150.00            |                       | 50.00                 | 200.00            |
| 6  | 010800001 | PROJECT SIGN                      | 1.00     | EA              | 80.00             |                       | 150.00                | 230.00            |
| 7  | 014000001 | FIELD AND LAB TESTING             | 1.00     | LS              |                   | 2,500.00              |                       | 2,500.00          |
| 8  | 015000001 | TEMPORARY TOILETS (2 AT 6. MO.)   | 12.00    | LS              |                   | 80.00                 |                       | 80.00             |
| 9  | 015000002 | TEMPORARY UTILITIES - WATER       | 6.00     | LS              |                   | 120.00                |                       | 120.00            |
| 10 | 015000003 | TEMPORARY UTILITIES - ELECTRICITY | 6.00     | LS              |                   | 85.00                 |                       | 85.00             |
| 11 | 016000001 | MOBILIZATION & DEMOBILIZATION     | 2.00     | EA              | 700.00            | 1,500.00              |                       | 2,200.00          |
| 12 | 016000002 | PROJECT VEHICLE                   | 6.00     | LS              |                   | 500.00                |                       | 500.00            |
| 13 | 016000010 | STORAGE TOOL TRAILER              | 6.00     | LS              |                   | 160.00                |                       | 160.00            |
| 14 | 016000003 | FIELD OFFICE SUPPLIES             | 6.00     | LS              |                   | 50.00                 |                       | 50.00             |
| 15 | 016000004 | MISC. SAFETY/FIELD SUPPLIES       | 6.00     | LS              |                   | 50.00                 |                       | 50.00             |
| 16 | 016000005 | FIRST AID                         | 1.00     | LS              |                   |                       | 75.00                 | 75.00             |
| 17 | 017000001 | PUNCH LIST                        | 1.00     | LS              | 150.00            |                       | 200.00                | 350.00            |
| 18 | 017100001 | FINAL CLEANUP & HAULING           | 80.00    | LS              | 5.00              |                       |                       | 5.00              |
|    | ...       | ...                               |          |                 |                   |                       |                       |                   |

# Leistungsverzeichnis, Preis-Spiegel

| Musterprojekt Sidoun Kurz P-Spiegel LV-Tabelle |                   |                      |                      |       |            |            |          |            |          |               |
|--|-------------------|----------------------|----------------------|-------|------------|------------|----------|------------|----------|---------------|
|  | aus Basis-Tabelle |                      |                      |       | Übersicht  |            | Meier    |            |          |               |
| LvOz   | Pos.              | Kurztext             | Meng                 | Einh  | Ø GP2      | MinGP2     | EP/Mat   | GP2        | / Abw%   | Abs%          |
| #  |                   | Hinweise: Hier b...  |                      |       | 254.421,42 | 225.496,68 |          | 225.496,68 | X        | 100,00        |
| v  | *A                |                      |                      |       |            |            |          |            |          |               |
| G  | 1                 | Baustelleneinrich... |                      |       | 4.754,15   | 4.228,63   |          | 4.727,81   | X        | 111,80        |
| T  | 1.001             | 1.1                  | BAUSTELLENEIN...     |       | 0,00       | 0,00       |          | 0,00       |          | 0,00          |
| b  | 1.001.001         | 1.1.10               |                      | 0,000 | 0,00       | 0,00       | 0,00     | 0,00       |          | 0,00          |
| b  | 1.001.002         | 1.1.20               | Baustelleneinrich... | 1,000 | n.A.       | 2.731,52   | 2.392,85 | 3.333,62   | 3.266,95 | X 136,53 2,00 |
|  | 1.001.003         | 1.1.30               | Markierungslinien    | 0,000 | m          | 0,00       | 0,00     | 0,00       | 0,00     | 0,00          |
|  | 1.001.004         | 1.1.40               | Räumen               | 1,000 | psch       | 0,00       | 0,00     | 0,00       | 0,00     | 0,00          |
| T  | 1.002             | 1.2                  | BAUTAFELN            |       |            | 677,71     | 623,26   |            | 676,44   | X 108,53      |
|  | 1.002.001         | 1.2.10               | Bautafel-Grundg...   | 1     | St         | 677,71     | 623,26   | 690,24     | 676,44   | X 108,53 2,00 |
| T  | 1.003             | 1.3                  | MEDIENVERSOR...      |       |            | 1.544,09   | 1.379,19 |            | 1.379,19 | X 100,00      |

# Preisspiegel «Зеркало цен»

WOHNHAUS LIEBSCH  
7100 NEUSIEDL AM SEE

## P R E I S S P I E G E L

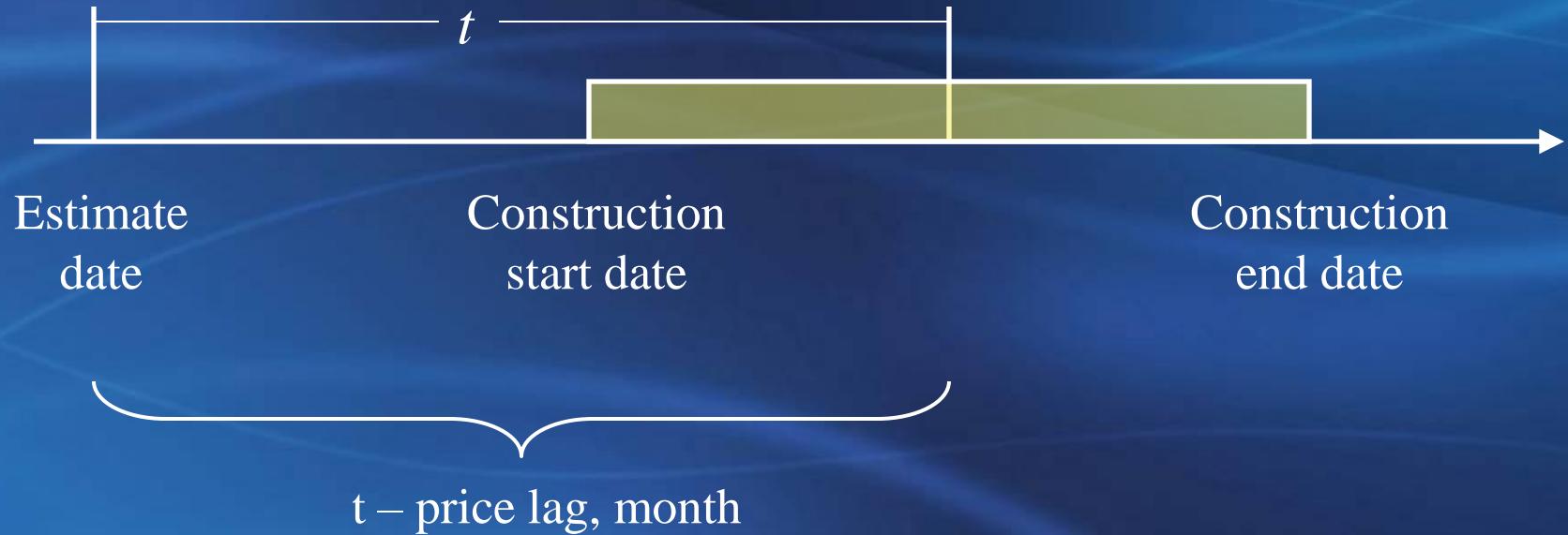
Variante Ausschreibungsvariante

HG OG LG POSNR

Mittel Min. Max.

| 00 01 09.1926B | Rahmen nur vers.in Wand H 3,2m | PP               | 720,00          | 400,00    | 580,00           | <b>320,00</b> |
|----------------|--------------------------------|------------------|-----------------|-----------|------------------|---------------|
| 4,00           | M1                             | 787,33 40,64%    | 219,48%         | LO        | 170,00           | 80,00         |
|                |                                |                  |                 | SO        | 10,00            | 20,00         |
|                |                                |                  |                 | EP        | 180,00           | 100,00        |
|                |                                |                  |                 | %         | 100,00           | 55,56         |
| 00 01 09.1927B | Fußabstr.außen nur vers.1m2    | PP               | 470,00          | 600,00    | <b>340,00</b>    | 750,00        |
| 1,00           | ST                             | 633,67 53,88%    | 131,30%         | LO        | 435,00           | 500,00        |
|                |                                |                  |                 | SO        | 35,00            | 100,00        |
|                |                                |                  |                 | EP        | 470,00           | 600,00        |
|                |                                |                  |                 | %         | 100,00           | 127,66        |
| 00 01 09.1932A | Vert.Kasten nur vers.b.0,5m2   | PP               | 470,00          | 600,00    | <b>340,00</b>    | 700,00        |
| 1,00           | ST                             | 658,67 51,62%    | 153,34%         | LO        | 435,00           | 550,00        |
|                |                                |                  |                 | SO        | 35,00            | 50,00         |
|                |                                |                  |                 | EP        | 470,00           | 600,00        |
|                |                                |                  |                 | %         | 100,00           | 127,66        |
| 00 01 09.1932C | Vert.Kasten nur vers.1-2m2     | PP               | <b>1.500,00</b> | 700,00    | <b>480,00</b>    | 1.000,00      |
| 1,00           | ST                             | 997,67 48,11%    | 150,35%         | LO        | 750,00           | 650,00        |
|                |                                |                  |                 | SO        | 750,00           | 50,00         |
|                |                                |                  |                 | EP        | 1.500,00         | 700,00        |
|                |                                |                  |                 | %         | 100,00           | 46,67         |
| 00 01 09.1934C | Lichtsch.GFK 125cm+Gitterrost  | PP               | 16.744,00       | 20.300,00 | <b>14.560,00</b> | 29.400,00     |
| 7,00           | ST                             | 19.590,67 74,32% | 150,07%         | LO        | 392,00           | 600,00        |
|                |                                |                  |                 | SO        | 2.000,00         | 2.300,00      |
|                |                                |                  |                 | EP        | 2.392,00         | 2.900,00      |
|                |                                |                  |                 | %         | 100,00           | 121,24        |
| 00 01 09.2002A | Schlitz 10/10cm Mwk.           | PP               | 850,00          | 700,00    | 750,00           | <b>300,00</b> |
| 10,00          | M1                             | 770,00 38,96%    | 146,75%         | LO        | 60,00            | 60,00         |
|                |                                |                  |                 | SO        | 5,00             | 10,00         |
|                |                                |                  |                 | EP        | 85,00            | 70,00         |
|                |                                |                  |                 | %         | 100,00           | 82,35         |
| 00 01 09.2002B | Schlitz 10/u.10-20cm Mwk.      | PP               | 1.050,00        | 800,00    | 1.000,00         | <b>450,00</b> |
| 10,00          | M1                             | 961,67 46,79%    | 139,34%         | LO        | 95,00            | 70,00         |
|                |                                |                  |                 | SO        | 10,00            | 10,00         |
|                |                                |                  |                 | EP        | 105,00           | 80,00         |
|                |                                |                  |                 | %         | 100,00           | 76,19         |
| 00 01 09.2004E | Schlitz schließen unv.10/10cm  | PP               | 900,00          | 800,00    | 900,00           | <b>300,00</b> |
| 10,00          | M1                             | 888,33 33,77%    | 146,34%         | LO        | 75,00            | 60,00         |
|                |                                |                  |                 | SO        | 15,00            | 20,00         |
|                |                                |                  |                 | EP        | 90,00            | 80,00         |
|                |                                |                  |                 | %         | 100,00           | 88,89         |

# Lump Sum with Inflation Forecast



$$C = C_0 (1 + d)^{t/12}$$