## HYDROGEOLOGICAL WINDOWS MAP BASED ON 3D GEOLOGICAL MODEL

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A hydrogeological window is the area where contamination may quickly infiltrate from the Earth surface and upper aquifers into deep aquifers.

In Moscow, the midCarboniferous aquifer is considered as a strategic water resource; therefore, it should be protected from pollution.

The map of hydrogeological windows is accepted by the Ecology department of Moscow municipality to be used for rational nature management.

## The Method of Mapping

The task is the zoning of territory by the time of filtration from the upper above-Jurassic aquifer to the midCarboniferous aquifer.

Quaternary aquitards including moraine loams and clays are not continous and cannot provide effective protection for Carboniferous aquifers.

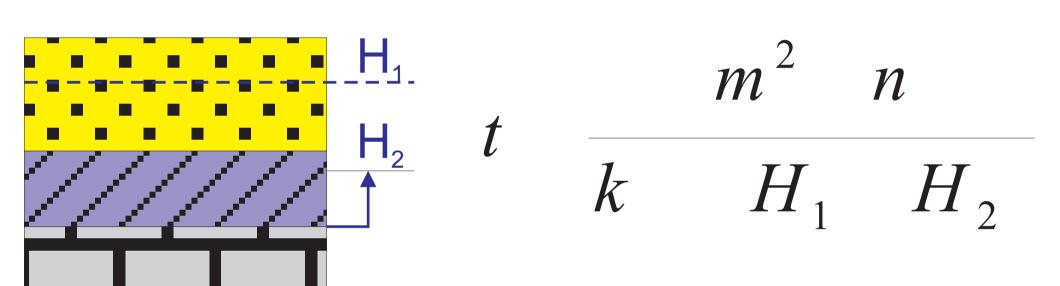
above-Jurassic and

midCarboniferous

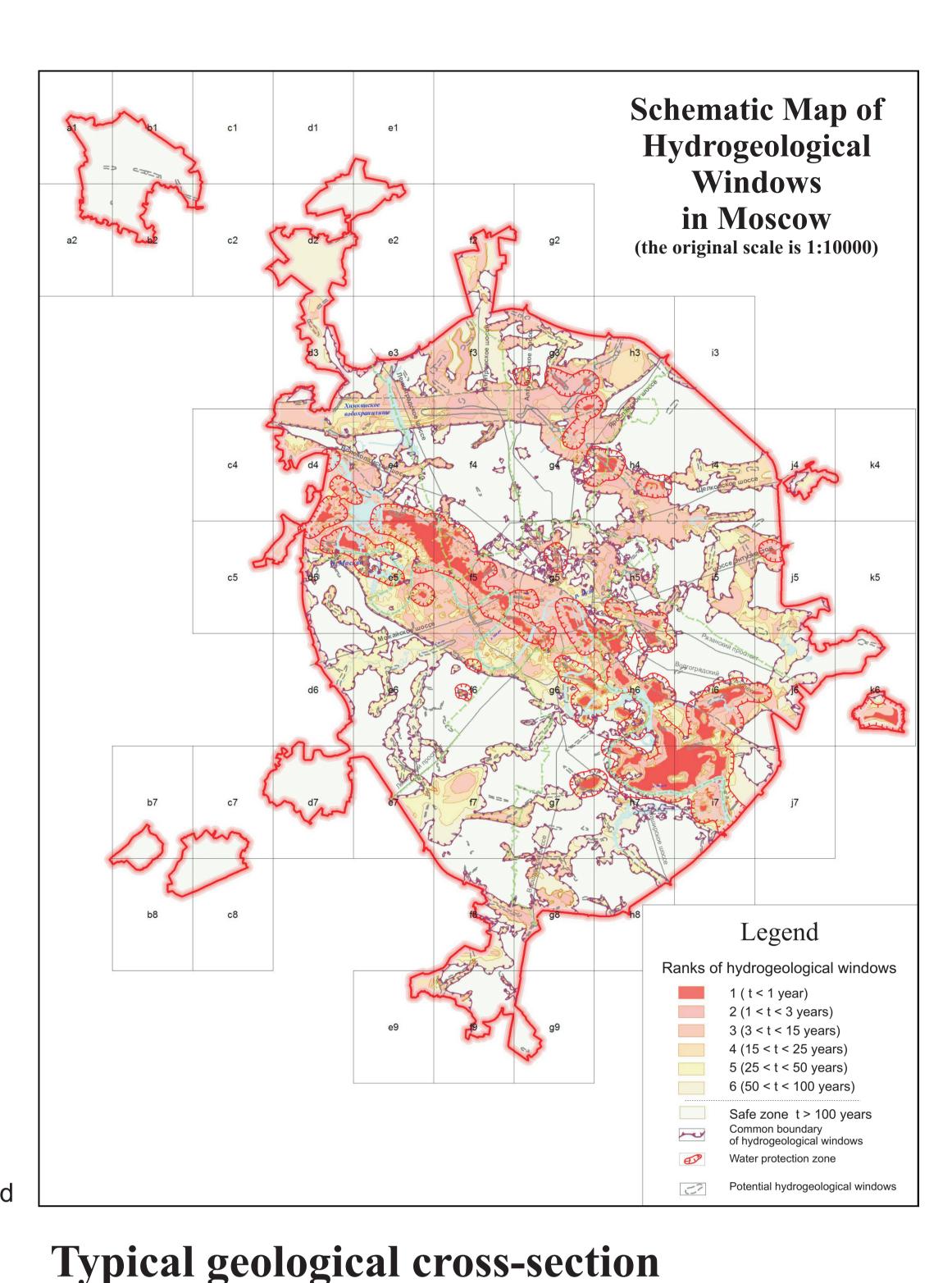
aquifers

Only Jurassic and Carboniferous aquitards are included into the mapping procedure.

The filtration time through one aquitard is calculated as follows



- t time of vertical filtration
- m thickness of the low-permeable bed k - filtration coefficient of the low-permeable bed
- n porosity of the low-permeable bed (=0.1)
- H₁ head of the above-Jurassic aquifer
- H<sub>2</sub> head of the Carboniferous aquifer



J2-3k-o

J2-3k-оГл СКВАЖИНА - 1970г/с

Ваполнена

Колонка Гидрогеология Опробования

Литологическ... Песок мелкозернистый Стратиграфия Бат-келловей

112.55

< Не определен >

Параметр Значение

Отметки: Абсолютные

Стратиграфич... J2bt-k Выход керна Подошва

Генезис

Мощность

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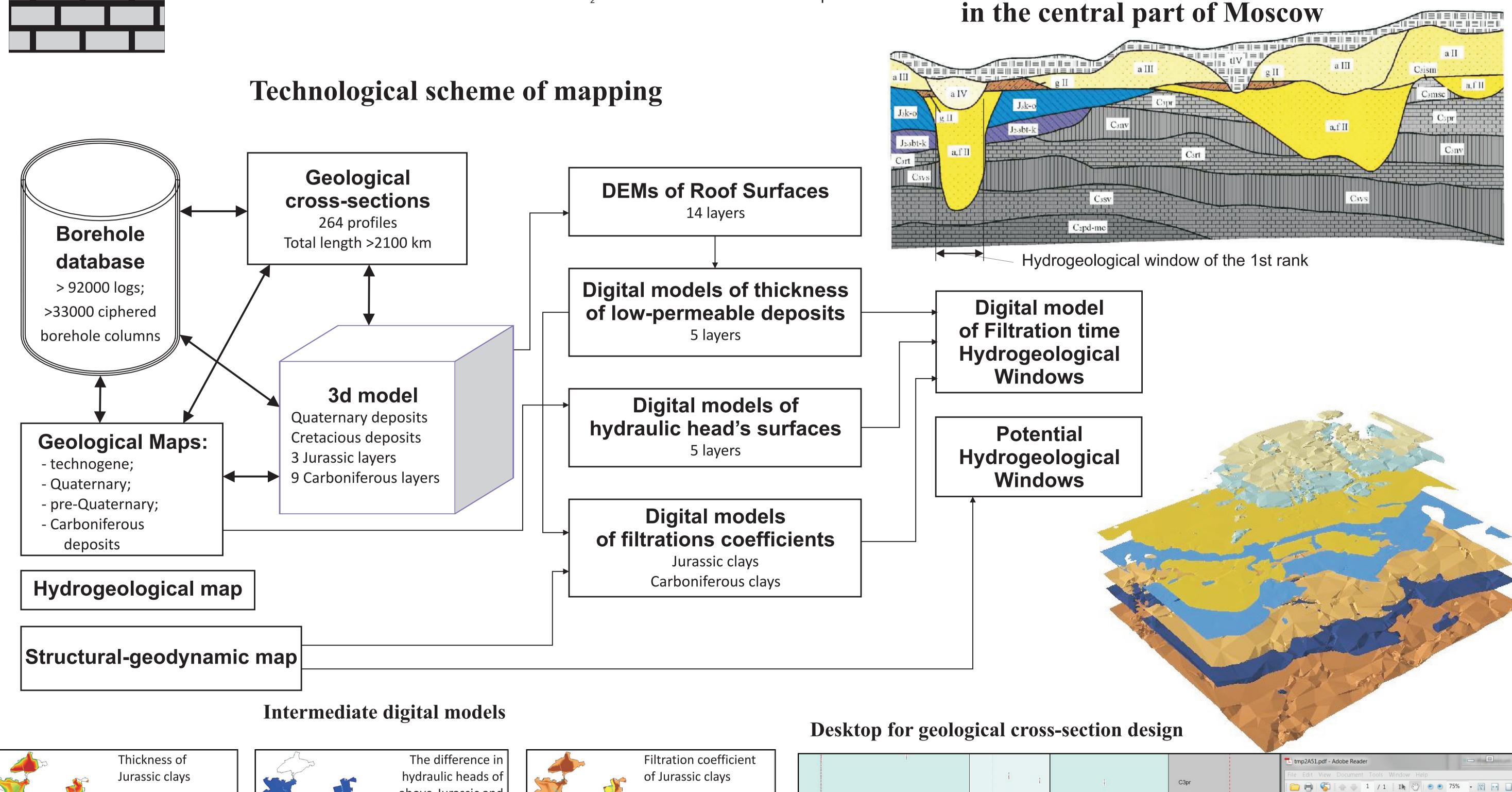
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1e-3 1e-4 1e-5 1e-6

fllok-dПесок мелі

fllok-dПесок средн

Ј3оГлина тугопл

allImk-klПесок мели

allimk-кіПесок/гравий

Ј3ttГлина/пес