

C++ code 13.2.51: Declaration of **ENTITY_MATRIX_PROVIDER** class for the computation of the element matrix for the monolithic Whitney FEM discretization of the Hodge-Laplacian variational problem → [GitLab](#)

```
2 class HodgeLaplacian2DElementMatrixProvider {
3 public:
4     // The size of the element matrix is  $6 \times 6$ .
5     using ElemMat = Eigen::Matrix<double, 6, 6>;
6     HodgeLaplacian2DElementMatrixProvider (
7         const HodgeLaplacian2DElementMatrixProvider &) = delete;
8     HodgeLaplacian2DElementMatrixProvider (
9         HodgeLaplacian2DElementMatrixProvider &&) noexcept = default;
10    HodgeLaplacian2DElementMatrixProvider &operator=(
11        const HodgeLaplacian2DElementMatrixProvider &) = delete;
12    HodgeLaplacian2DElementMatrixProvider &operator=(
13        HodgeLaplacian2DElementMatrixProvider &&) = delete;
14    HodgeLaplacian2DElementMatrixProvider () = default;
15    virtual ~HodgeLaplacian2DElementMatrixProvider () = default;
16    [[nodiscard]] bool isActive(const If::mesh::Entity & /*cell*/) {
17        return true;
18    }
19    // Computation of element matrix  $\mathbf{M}_K$ : two versions
20    [[nodiscard]] ElemMat Eval(const If::mesh::Entity &cell);
21    [[nodiscard]] ElemMat Eval_alt(const If::mesh::Entity &cell);
22
23 private:
24     ElemMat MK_;
25 };
```