What is claimed is:

1. An elevator operation diagnosis device comprising:

an operation efficiency reduction phenomenon detection processing unit that collects operation data of an elevator and detects an operation efficiency reduction phenomenon of the elevator based on the operation data;

a factor determination processing unit that determines a factor of the operation efficiency reduction phenomenon;

an improvement measure selection processing unit that selects one or a plurality of improvement measures based on the operation efficiency reduction phenomenon detected by the operation efficiency reduction phenomenon detection processing unit and the factor determined by the factor determination processing unit; and

an improvement measure information output processing unit that outputs the improvement measure selected by the improvement measure selection processing unit,

wherein the improvement measure includes at least two of a change of operation control of the elevator, notification of information on a way to use and/or operate the elevator to a user of the elevator, and a restriction on a use state of the elevator, and wherein

the improvement measure selection processing unit calculates evaluation values respectively for a magnitude of an improvement effect of the improvement measure, cost required for implementation of the improvement measure, a magnitude of a change of an action of the elevator user caused by implementation of the improvement measure, and an evaluation score for the improvement measure is calculated by an added value or a weighted addition value of each of the evaluation values.

2. The elevator operation diagnosis device according to claim 1, wherein

the improvement measure selection processing unit sets a priority for the selected improvement measure based on the calculated evaluation score for the improvement measure, and

the improvement measure information output processing unit outputs the selected improvement measure according to a ranking of the improvement measure selected by the improvement measure selection processing unit.

3. The elevator operation diagnosis device according to claim 1 or 2, further comprising

a database that records a factor of the elevator operation efficiency reduction phenomenon and improvement measures previously implemented in other elevators,

wherein the improvement measure selection processing

unit estimates a magnitude of an effect based on actual record data of an improvement effect obtained by implementation in the other elevator when a similar improvement measure has been implemented in the other elevator recorded in the database.

3. The elevator operation diagnosis device according to claim 1 or 2, wherein

the improvement measure selection processing unit evaluates an improvement measure such that an evaluation score of the improvement measure increases as a cost required for implementation of the selected improvement measure decreases.

5. The elevator operation diagnosis device according to claim 1 or 2, wherein

the improvement measure selection processing unit evaluates an improvement measure such that an evaluation score of the improvement measure decreases as a change of an action of a user caused by implementation of the selected improvement measure increases.

6. The elevator operation diagnosis device according to claim 1 or 2, wherein

the improvement measure selection processing unit evaluates improvement measures such that an improvement measure belonging to the notification of the information on the way to use and/or operate the elevator by

implementation of the selected improvement measure has a higher evaluation score than the other improvement measures.

7. The elevator operation diagnosis device according to claim 1, further comprising

an implementation plan formulation processing unit that sets an implementation plan to sequentially implement the improvement measures,

wherein the implementation plan formulation processing unit formulates the implementation plan having an order in which an improvement measure belonging to the notification of the information on the way to use or operate the elevator is implemented first, and an improvement measure regarding the change of operation control of the elevator or the restriction on the use state of the elevator, or regarding a change of an action schedule of the user of the elevator is implemented next.

8. The elevator operation diagnosis device according to claim 1, further comprising

an implementation plan formulation processing unit that sets an implementation plan to sequentially implement the improvement measures.

9. The elevator operation diagnosis device according to claim 1, further comprising

an improvement measure execution processing unit

that allows a building owner or a building manager to determine an improvement measure to be implemented,

wherein the improvement measure execution processing unit notifies an external elevator control device to implement a change of control when the determined improvement measure belongs to the change of the operation control of the elevator, notifies an information output device present in an elevator car and/or a hall of the elevator of information relating to the improvement measure when the determined improvement measure belongs to the notification of the information on the way to use and/or operate the elevator, and notifies an information processing device of a tenant of a building where the elevator has been installed of the information on the restriction on the use state when the determined improvement measure is the restriction on the use state.

10. An elevator operation diagnosis system comprising:

an elevator control device that controls operation of one or a plurality of elevators;

a dashboard information processing device that outputs information on elevator operation diagnosis; and

an elevator operation diagnosis device that performs the elevator operation diagnosis and proposes improvement measures to a building owner or a building manager when

finding a phenomenon that elevator operation efficiency is reduced,

wherein the elevator operation diagnosis device comprises

an operation efficiency reduction phenomenon detection processing unit that collects elevator operation data from the elevator control device and detects the phenomenon that the elevator operation efficiency is deteriorated based on the operation data,

a factor determination processing unit that determines a factor of the operation efficiency reduction phenomenon,

an improvement measure selection processing unit that selects one or a plurality of improvement measures based on the operation efficiency reduction phenomenon detected by the operation efficiency reduction phenomenon detection processing unit and the factor determined by the factor determination processing unit, and

a selected improvement measure output unit that outputs the improvement measure selected by the improvement measure selection processing unit, and

the improvement measure includes at least two types of a change of operation control of the elevator, notification of information on a way to use and/or operate the elevator to an elevator user, and a restriction on a

use state of the elevator,wherein

the improvement measure selection processing unit calculates evaluation values respectively for a magnitude of an improvement effect of the improvement measure, cost required for implementation of the improvement measure, a magnitude of a change of an action of the elevator user caused by implementation of the improvement measure, and an evaluation score for the improvement measure is calculated by an added value or a weighted addition value of each of the evaluation values.