



SUSTAINABLE
CONSTRUCTION
INSTITUTE OF
STRUCTURAL DESIGN

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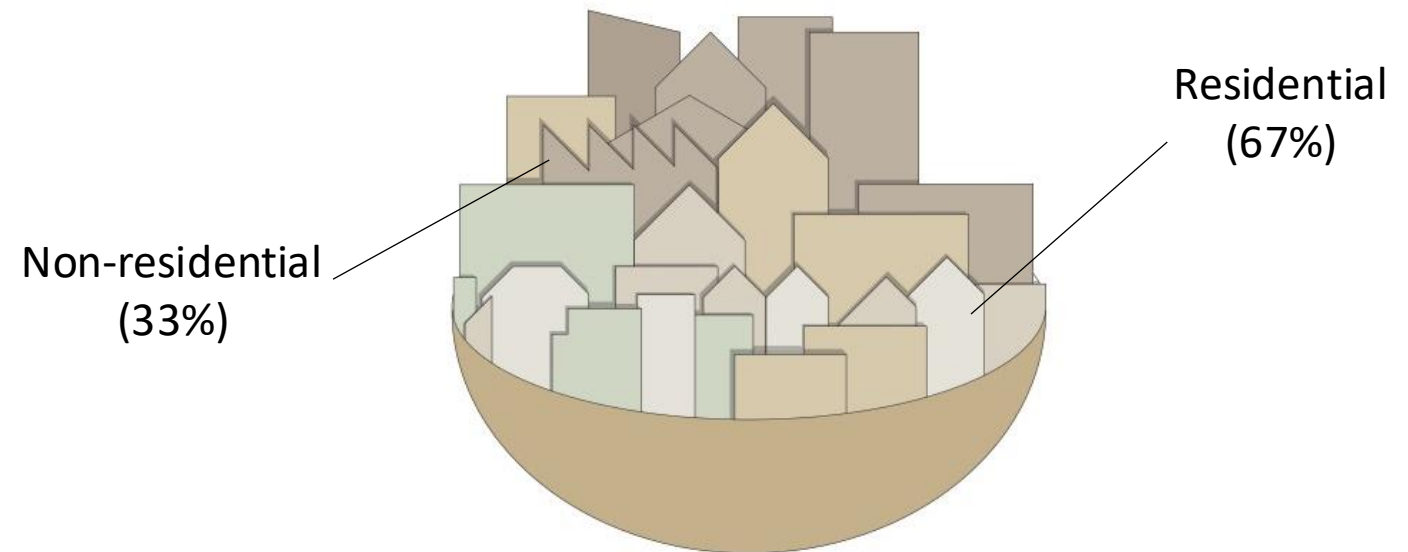
Wohlfühlen in Gebäuden

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90 % unserer Zeit verbringen in in Gebäuden

SBS- Sick Building Syndrome

BRS- Building Related Illnesses



In Austria:

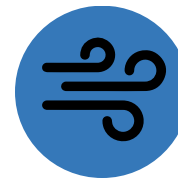
- ~ 2.4 million buildings
- ~ 900 million m² net floor area

WELL

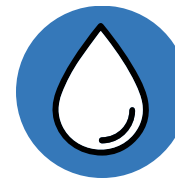
Bewertungssystem, das sich ausschließlich auf das Ziel konzentriert, mit der Gestaltung von Gebäuden und Innenräumen positiven Einfluss auf den Komfort, die Gesundheit und das Wohlbefinden der Nutzer zu nehmen

Folgende Themenfelder werden im WELL Verfahren betrachtet:

- Raumluftqualität
- Wasserqualität
- Ernährung
- Visueller Komfort
- Bewegung
- Thermischer Komfort
- Raum- und Bauakustik
- Emissionsarme und Ressourcenschonende Baumaterialien
- Zufriedenheit, Ausgeglichenheit
- Gemeinschaft
- Innovationsansätze



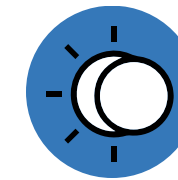
Luft



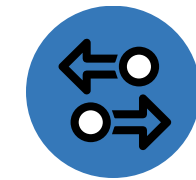
Wasser



Nahrung



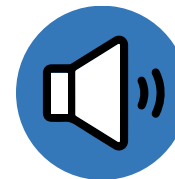
Licht



Bewegung



Thermischer
Komfort



Klang



Material



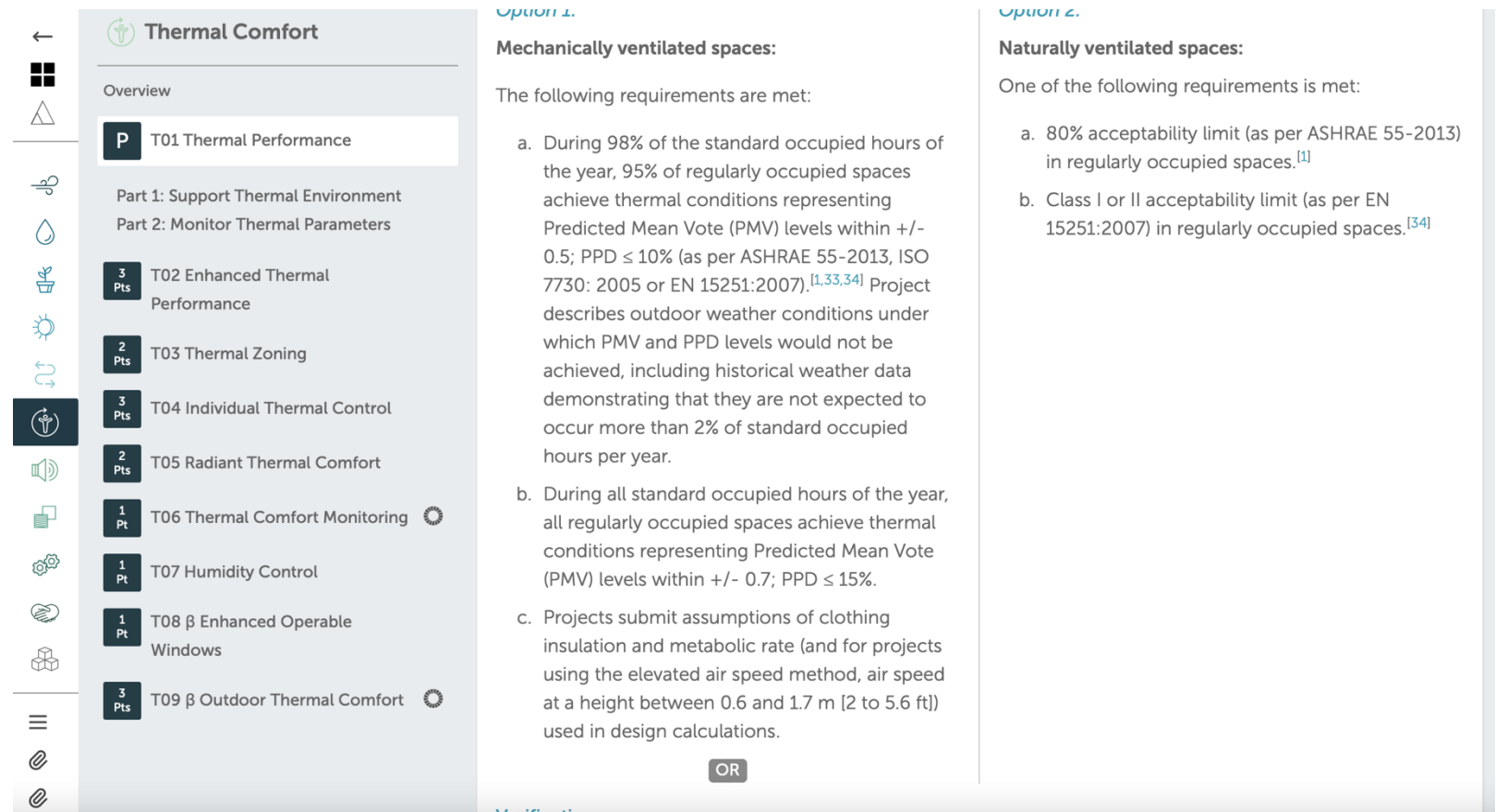
Geist



Gemeinschaft

WELL

- <https://v2.wellcertified.com/>
- Thermischer Komfort



Thermal Comfort

Overview

- P** T01 Thermal Performance
 - Part 1: Support Thermal Environment
 - Part 2: Monitor Thermal Parameters
- 3 Pts** T02 Enhanced Thermal Performance
- 2 Pts** T03 Thermal Zoning
- 3 Pts** T04 Individual Thermal Control
- 2 Pts** T05 Radiant Thermal Comfort
- 1 Pt** T06 Thermal Comfort Monitoring
- 1 Pt** T07 Humidity Control
- 1 Pt** T08 β Enhanced Operable Windows
- 3 Pts** T09 β Outdoor Thermal Comfort

Option 1.
Mechanically ventilated spaces:
 The following requirements are met:

- During 98% of the standard occupied hours of the year, 95% of regularly occupied spaces achieve thermal conditions representing Predicted Mean Vote (PMV) levels within +/- 0.5; PPD ≤ 10% (as per ASHRAE 55-2013, ISO 7730: 2005 or EN 15251:2007).^[1,33,34] Project describes outdoor weather conditions under which PMV and PPD levels would not be achieved, including historical weather data demonstrating that they are not expected to occur more than 2% of standard occupied hours per year.
- During all standard occupied hours of the year, all regularly occupied spaces achieve thermal conditions representing Predicted Mean Vote (PMV) levels within +/- 0.7; PPD ≤ 15%.
- Projects submit assumptions of clothing insulation and metabolic rate (and for projects using the elevated air speed method, air speed at a height between 0.6 and 1.7 m [2 to 5.6 ft]) used in design calculations.

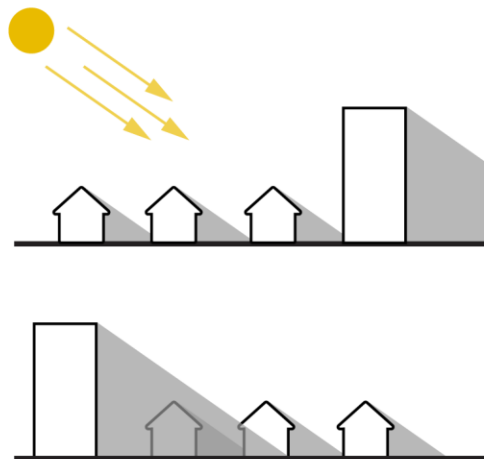
Option 2.
Naturally ventilated spaces:
 One of the following requirements is met:

- 80% acceptability limit (as per ASHRAE 55-2013) in regularly occupied spaces.^[1]
- Class I or II acceptability limit (as per EN 15251:2007) in regularly occupied spaces.^[34]

OR

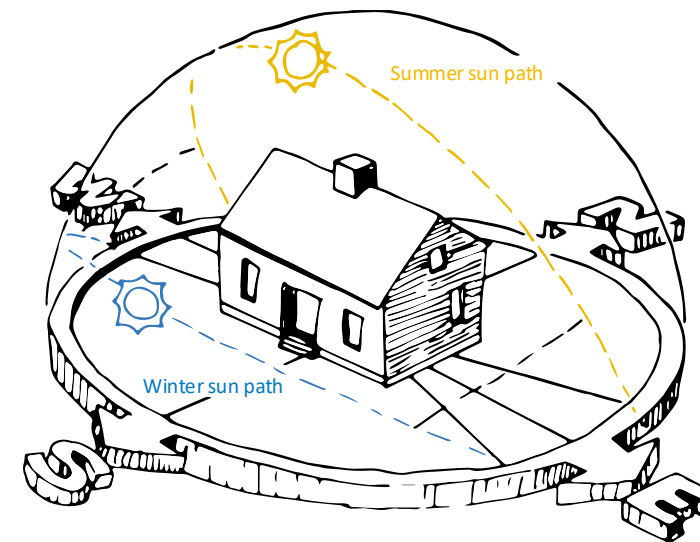
Orientierung des Gebäudes

- Ausrichtung nach Himmelsrichtungen für optimale Sonneneinstrahlung
- Minimierung von Schattenwürfen



Summer sun

- Sunpath at a high angle sun, north to E-W axis
- Glare free daylight is most easily available on north facade as minimal solar radiation will fall at high angle
- Easy shading of south facade from high angle sun

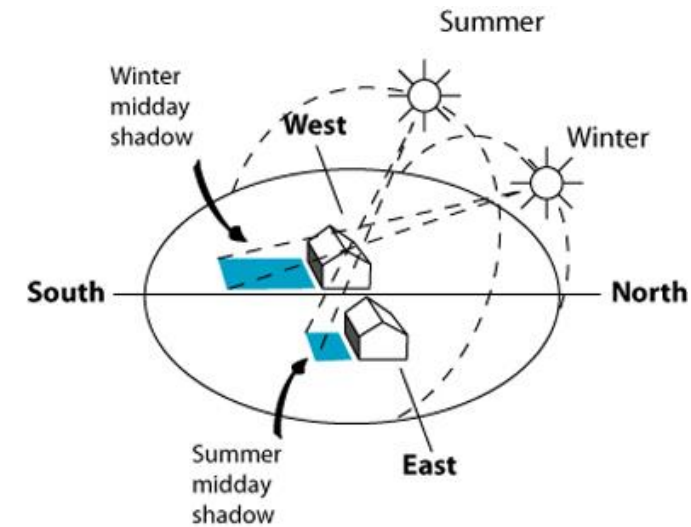
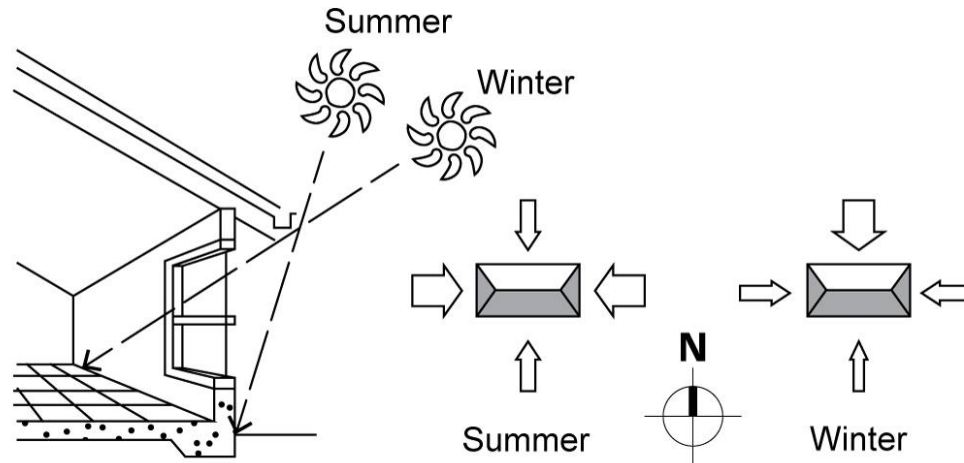


Winter sun

- Sunpath at a low angle sun, south to E-W axis
- Solar radiation will penetrate south facing facades at a low angle during winter
- East and west facades continue to receive uniform, strong solar radiation at low angle through the year

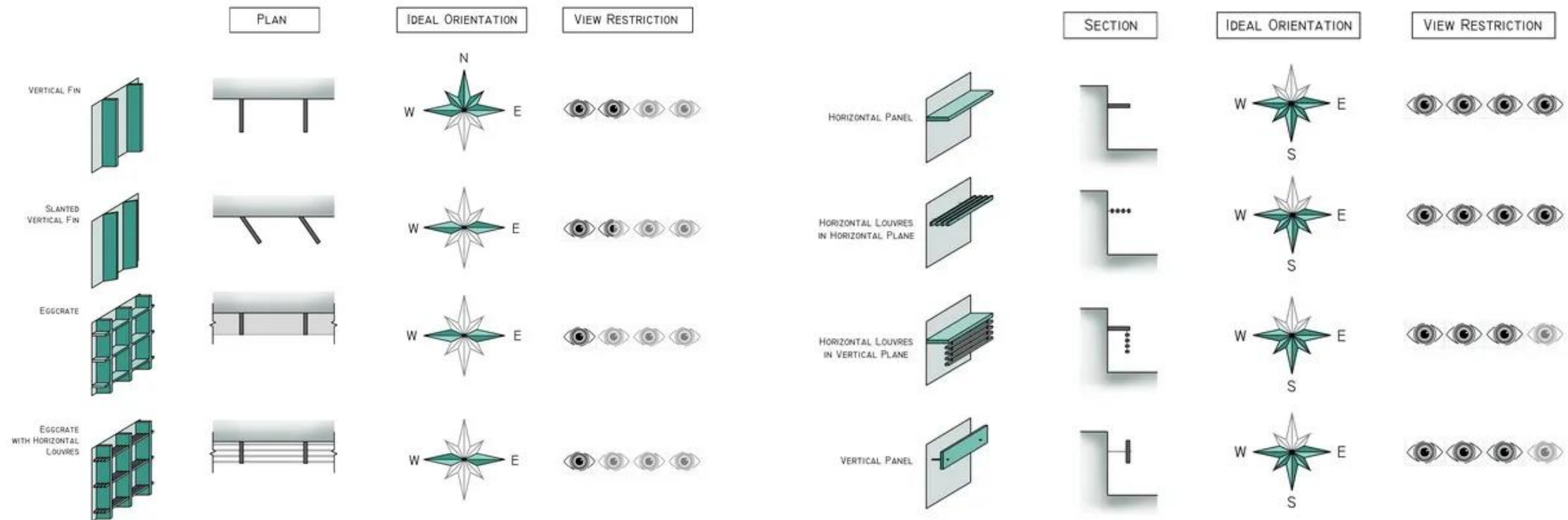
Optimierung der Solaren gewinne

- Auswahl passender Fenstergrößen und -typen
- Einsatz von Sonnenschutzvorrichtungen



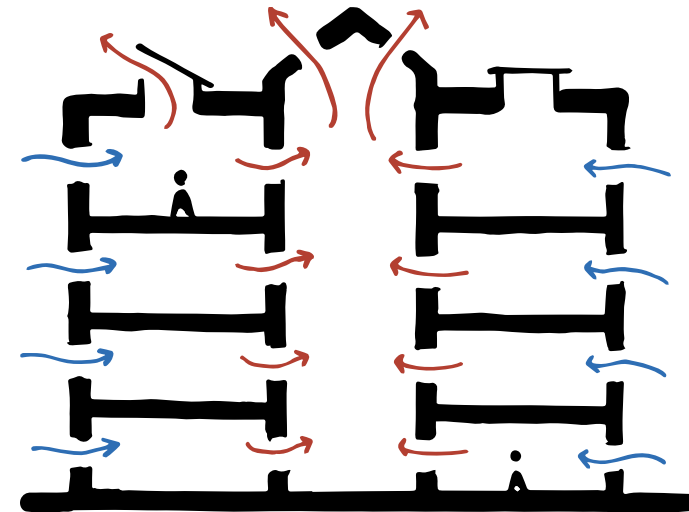
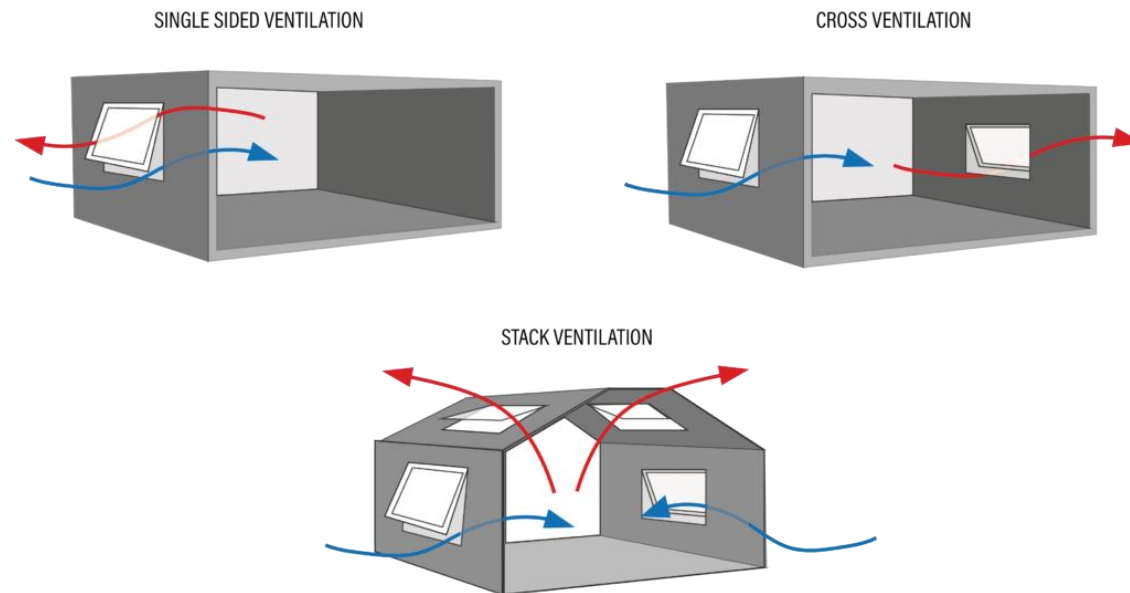
Optimierung der Solaren gewinne

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Natürliche Belüftung

- Planung für natürliche Luftzirkulation und Frischluftzufuhr
- Reduzierung des Bedarfs an mechanischen Lüftungssystemen





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