UTILIZATION OF ARTIFICIAL INTELLIGENCE IN SEISMIC ANALYSIS OF REINFORCED CONCRETE FRAMED BUILDINGS

A DISSERTATION

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF

MASTER OF TECHNOLOGY

IN

STRUCTURAL ENGINEERING

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I, SHUBHAM RANA, 2K22/STE/15, of M.Tech (Structural Engineering), hereby declare that the project Dissertation titled "Utilization of Artificial Intelligence in Seismic Analysis of Reinforced Concrete framed buildings" which is submitted by me to the Department of Civil Engineering, Delhi Technological University, Delhi in partial fulfillment of the requirement for the award of the degree of Master of Technology, is original and not copied from any source without proper citation. This work has not previously formed the basis for the award of any Degree, Diploma Associateship, Fellowship, or other similar title or recognition.

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I hereby certify that the Project Dissertation titled “Utilization of Artificial Intelligence in Seismic Analysis of Reinforced Concrete framed buildings” which is submitted by SHUBHAM RANA, 2K22/STE/15, Department of Civil Engineering, Delhi Technological University, Delhi in partial fulfillment of the requirement for the award of the degree of Master of Technology, is a record of the project work carried out by the student under my supervision. To the best of my knowledge, this work has not been submitted in part or full for any Degree or Diploma to this University or elsewhere.

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ABSTRACT

Earthquakes are among the most catastrophic natural disasters, causing significant losses in life and property worldwide. The primary cause of structural damage during an earthquake is the unpredictable lateral loads imposed on buildings. To mitigate such damage, the structural framework must be robust enough to withstand these loads. Advances in software such as ETABS (Extended Three-dimensional Analysis of Building Systems) have enhanced the understanding of structural behavior under seismic loads. Recently, the integration of artificial intelligence (AI) techniques, particularly artificial neural networks (ANNs), has shown promise in improving the seismic analysis of reinforced concrete framed buildings.

This paper focuses on the application of ANN in predicting the base shear and deflection of an eight-story reinforced concrete building modeled using ETABS. The research involves training an ANN model using data generated from ETABS simulations, followed by validation of the ANN predictions against ETABS results. Key metrics such as Scatter Index (SI), root-mean-squared error (RMSE), and correlation coefficient (R^2) are utilized to evaluate the accuracy of the ANN model. The study highlights the challenges in AI model development, including data quality and generalization to different contexts.

The findings demonstrate that the ANN model achieves high prediction accuracy, with a scatter index of less than 1% for both base shear and deflection, and

a correlation coefficient close to 1. These results underscore the potential of ANN as a reliable tool for early prediction of structural response during seismic events. The study concludes by suggesting that ANN-based approaches can significantly enhance seismic analysis, offering a more efficient and accurate alternative to traditional methods, with future potential for real-time structural health monitoring and assessment.

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SHUBHAM RANA

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LIST OF SYMBOLS AND ABBREVIATIONS

Abbreviations/Symbols	**Descriptions**
AI	Artificial Intelligence
ANN	Artificial Neural Network
ETABS	Extended Three-dimensional Analysis o Building System
RMSE	Root-mean-squared error
SI	Scatter Index
MSE	Mean-squared error
HYSD	High Yielding Strength Deformed Steel

CHAPTER 1
INTRODUCTION

1.1 GENERAL

The most catastrophic, inevitable, and unexpected natural disaster in human history is an earthquake (Smith, 2003). Every year, earthquakes cause countless losses in terms of life and property around the world and are also equally accountable for a number of multi-hazard repercussions (Bertero & Shah, 1983; El Alami, Tadili, Brahim, & Mouayn, 2004).

The primary cause of structural damage is the intensity of the earthquake, which forces an excessively unpredictable lateral load on the building. Consequently, the structural framework needs to be strong enough to support the load (Hait et al., 2020). Numerous software programs have been created to enhance understanding of the structural behavior of buildings subjected to seismic loads (Hait et al., 2020b). The most widely used structural engineering analysis and design software worldwide, especially in structural and seismic engineering, is ETABS, a top program for building structure analysis (Hait et al., 2020b). The acronym ETABS stands for "Extended Three-dimensional Analysis of Building System"(Hait et al., 2020b).

The use of artificial intelligence in seismic analysis of reinforced concrete framed buildings has emerged as a promising approach to improve the safety and performance of these structures (Sun et al., 2020). Artificial intelligence techniques, such as machine learning and artificial neural networks, have been utilized to predict the response and collapse status of modern code-compliant reinforced concrete frame buildings. These machine learning methods, specifically regression-based and classification-based algorithms, have shown promising results in accurately predicting the response of buildings and classifying their collapse status (Park et al., 2020; Ma et al., 2019) (Hwang et al., 2021). Furthermore, these artificial intelligence techniques have demonstrated the ability to handle complex and nonlinear behavior observed in reinforced concrete structures during seismic events.

By analyzing the system's input and output signals, the dynamics of the process can be identified with the aid of computers and effective mathematical techniques (Sahoo et al., 2014). A mathematical model that allows for the estimation or prediction of the dynamic behavior is typically the outcome of this kind of process identification (Sahoo et al., 2014). It is well known that non-linear optimization problems typically arise from linear system identification problems (Sahoo et al., 2014). To find the required answer, this calls for an innovative iterative approach . Numerous offline and online techniques are available, including the Gauss–Newton, Kalman filtering, and probabilistic techniques like maximum-likelihood estimation (Sahoo et al., 2014). Nonetheless, the identification difficulty for an extensive range of factors is frequently encountered due to two fundamental challenges:

(1) The objective function surface may have more than one maxima or minima, and convergence to the right parameters can only occur if the first estimate is thought to be reasonably close to the parameters that need to be determined (Sahoo et al., 2014).
(2) Inverse problems typically yield parameter estimates that are not unique. In order to address these challenges, scholars have devised diverse approaches for identification pertaining to the aforementioned issue, leveraging the powerful instrument of artificial neural networks (ANN) (Sahoo et al., 2014).

The artificial neural network (ANN) approach is a commonly utilized generic prediction tool in many various fields of application, including civil engineering (Suryanita, 2016). Several researchers have looked into using artificial neural networks (ANN) in multistory shear structures to forecast a building's safety. (Suryanita, 2016) A radically new method for system identification is offered by artificial neural networks (ANNs). In many different engineering domains, they have been effectively used for dynamic system identification and control (Biala-siewicz and Ho, 1991; Bozich and Mackay, 1991; Nikolaouand Hanagandi, 1991; Singh et al., 1991).

1.2 CONCEPT OF NEURAL NETWORK

The information processing capacities of biological nerve systems have been studied over the past fifty years, leading to a basic grasp of concepts common to organic information processing (Conte et al., 1994). A fundamental idea is the artificial neuron, which is represented as nodes in a directed graph and is inspired by biological systems (Conte et al., 1994). Each arc on the graph indicates the direction of the electrical pulses, which illustrate the flow of electrical impulses in a biological system (Conte et al., 1994). The weighted sum of all inputs is added together, and each artificial neuron's associated transfer function is assessed in order to determine the output of the artificial neuron (Conte et al., 1994). Dot products, which are linear multiplications and sums, make up the artificial neural network (Conte et al., 1994).

1.3 TERMINOLOGIES

The below given definition used in this paper are adopted from IS 1893 (Part 1): 2016,

"**Design Seismic Base Shear (V_B)** — It is the horizontal lateral force in the considered direction of earthquake shaking that the structure shall be designed for. It is denoted by V_B."

It can be calculated according to formula given in IS code 1893:2016 (Part 1).

$\mathbf{V_B = A_h * W}$ Clause 7.6.1, IS 1893(part 1): 2016. ....(1)

Where,

A_h = Design horizontal acceleration spectrum value using the fundamental natural period T' in the considered direction of vibration.

W= Seismic weight of building (Clause 7.4, IS 1893(part 1):2016)

Design horizontal seismic coefficient (Ah) is calculated by:

A_h= Z*I*Sa/2gR (Clause 6.4.2, IS 1893(part 1):2016) ....(2)

Where,

Z= Seismic zone factor (Table 3; IS 1893(part 1):2016)

I= Importance factor (Table 8; Clause 7.2.3, IS 1893:2016)

R= Response reduction factor (Table 9; Clause 7.2.6, IS 1893:2016)

Sa/g= Design acceleration coefficient for different types of soil (Clause 6.4.2.1)

"**Response Reduction Factor (R)** — It is the factor by which the base shear induced in a structure, if it were to remain elastic, is reduced to obtain the design base shear. It depends on the perceived seismic damage performance of the structure, characterized by ductile or brittle deformations, redundancy in the structure, or overstrength inherent in the design process."

"**Seismic Zone Factor (Z)** — It is the value of peak ground acceleration considered by this standard for the design of structures located in each seismic zone."

"**Time History Analysis** — It is an analysis of the dynamic response of the structure at each instant of time, when its base is subjected to a specific ground motion time history."

"**Importance Factor (I)** — It is a factor used to estimate design seismic force depending on the functional use of the structure, characterized by hazardous consequences of its failure, post-earthquake functional needs, historical value, or economic importance."

"**Response Acceleration Coefficient of a Structure (Sa/g)** — It is a factor denoting the normalized design acceleration spectrum value to be considered for the design of structures subjected to earthquake ground shaking; this value depends on the natural period of oscillation of the structure and damping to be considered in the design of the structure."

"**Scatter Index-** Scatter index is calculated by dividing RMSE with mean of the observations at each grid point and multiplying it with 100. It presents the percentage of RMS difference with respect to mean observation or it gives the percentage of expected error for the parameter" (Scatter Index, n.d.)

1.4 OBJECTIVES OF THE STUDY

The primary aspirations of the project are:

- Modelling a G+7 storey building with varying beams and column sizes using ETABS.
- Calculating base shear and deflection for a RC framed building using ETABS.
- To develop a neural network to predict the base shear and deflection for a G+7 storey building
- Validating the data from ANN (MATLAB) using results from ETABS
- Calculating the gross margin of error in terms of scatter Index (SI), root-mean-squared error (RMSE), and correlation coefficient (R^2)

1.5 OVERVIEW OF THESIS

Chapter 1 - deals with the description about an introduction to the topic, its application and significance. Further, concept of neural network is elaborated and related terminologies are explained. Objective, scope and limitation of thesis is also given in this chapter

.

Chapter 2- discusses some of the literature and previous work on use of neural networking for seismic analysis of RC framed buildings by several authors with different parameters such as story-drift, story shear, overturning moment etc.

Chapter 3 – discusses the methodology followed along with details of the process and analytical work carried out. It outlines the overall process used which is use of ETABS for structural modelling, then training the dataset to the ANN model and final predicted values obtained.

Chapter 4 - discusses the results and discussion analyzed by ANN(MATLAB) for prediction of base shear and deflection and their interpretation in the form of tables and graphs. It also highlights the accuracy of the ANN model.

Chapter 5 – deal with the conclusion of the present study and way forward. Bibliography of the literatures which have been referred in the study is also provided.

1.6 LIMITATION

The effectiveness of AI algorithms relies heavily on the availability and quality of data. Limited or low-quality seismic data can hinder the accuracy of AI models in predicting seismic loading. Further, seismic behavior of structures is complex and influenced by various factors such as soil conditions, building geometry, material properties, and structural detailing. AI models may struggle to capture the intricacies of these interactions accurately. AI models trained on specific datasets may not generalize well to different geographical locations or building types. They might perform well within the context they were trained on but could lack robustness when applied to new scenarios.

AI algorithms, especially deep learning models, can be computationally intensive and require significant computational resources for training and inference. This can pose challenges in terms of time and cost, especially for large-scale analyses. Additionally, validating and verifying the accuracy of AI models for seismic analysis requires extensive testing against established engineering principles and real-world data. Ensuring the reliability of AI-generated results is crucial for engineering safety. While AI can automate certain aspects of seismic analysis, human expertise remains crucial for interpreting results, making engineering judgments, and ensuring the safety and integrity of the structures.

CHAPTER 2

LITERATURE REVIEW

2.1 GENERAL

The present chapter involves the detailed literature study done to understand in depth about the use of Artificial Intelligence Researchers found out that AI based tools can be incorporated A detailed literature review of several researches has been summarized below”

Wang et al., (2023) discussed the nonlinear numerical simulation with AI tools to create a simulation-driven framework for earthquake-resistant structural design. Through the use of numerical nonlinear response history analyses (NRHAs), the framework generates a database of ideal design parameters and trains artificial intelligence models to produce them. The framework determines the height-wise distribution of total design lateral force for a strong back system using an artificial neural network (ANN) model and a database of 1200 samples.The majority of the absolute errors in the generated ANN model were less than 1%, indicating the feasibility of the suggested AI-assisted simulation-driven earthquake resistant design framework.

Luo & Paal, (2022) suggested a unique computational method for seismic response prediction of RC frames that is improved by artificial intelligence (AI) and can address these issues. The suggested AI-enhanced method combines a shear building model with an AI technique. The shear building model effectively formulates the structural stiffness matrix, while the AI technique can directly use the real-world experimental data of RC columns to determine the lateral stiffness of each column in the desired RC frame. Because real-world data is used, this technique can improve forecast accuracy while keeping high computing efficiency because the shear building model is incorporated.

Behera et al., (2024) used the feed forward back propagation artificial neural network (ANN) model in the paper which can accurately forecast target structure design parameters in an acceptable computational time. Important factors such peak ground acceleration, velocity, displacement, time length, and building parameters are taken into account by the AI model. The paper concluded by stating that design of EQ-resistant structures may benefit greatly from research and use of this meta-heuristic method.

Wang et al. (2017) showed that prior to mechanical abrasion, immersion of CRCA in acetic acid, produces RAC that is more durable than CM.

Conte et al., (1994) describes a neural network-based method that uses multi-layer feed forward neural networks with a back propagation learning algorithm to estimate the seismic response of multi-story frame buildings. The network's capacity to learn is tested for a variety of inputs, such as base excitation and lateral forces at floor levels. According to the study, multi-story structures' linear elastic dynamic behavior can be effectively learned and simulated by neural network models that are set up correctly.

Özkan et al., (2022) suggests that with the least amount of input data possible, this study aims to design an Artificial Neural Network (ANN) based practical rapid assessment approach for Reinforced Concrete (RC) buildings. The results demonstrate that an ANN may be used to accurately predict the earthquake behavior of reinforced concrete buildings.

2.2 STUDY GAP

The abstract overcomes several significant study gaps in the field of seismic analysis of reinforced concrete framed buildings:

Integration of AI in Seismic Analysis: Previous studies primarily relied on traditional seismic analysis methods using software like ETABS. The integration of artificial neural networks (ANNs) to predict seismic responses such as base shear and deflection marks a significant advancement, addressing the gap in applying AI techniques for seismic analysis.

Accuracy and Validation of AI Models: There has been skepticism regarding the accuracy and reliability of AI models in structural engineering. This study addresses this gap by providing robust validation metrics (Scatter Index, RMSE, and correlation coefficient) that demonstrate the high accuracy of the ANN predictions against ETABS results.

Efficiency and Accuracy Compared to Traditional Methods: The study suggests that ANN-based approaches can offer a more efficient and accurate alternative to traditional seismic analysis methods, overcoming limitations related to the complexity and computational intensity of conventional techniques.

Future Potential for Real-time Monitoring: By demonstrating the effectiveness of ANNs in predicting seismic responses, the study opens up possibilities for future applications in real-time structural health monitoring and assessment, an area previously underexplored.

CHAPTER 3
METHODOLOGY

3.1 GENERAL

The ANN model was trained using the ETABS results, and it was employed to forecast the structure's displacement in the current analytical tests. The outcomes of the recent analytical experiments were used to train the ANN model. ETABS is used to simulate eight-storey reinforced concrete frame buildings (data to be trained specifically on base shear and deflection), and then ANN model is trained through the ETABS validated results. Three interconnected layers make up its composition: an input layer, a hidden layer, and an output layer. Statistical criteria like scatter index (SI), root-mean-squared error (RMSE), and correlation coefficient (R^2) were used to compare how well the models performed. IS Code 1893:2016 has been incorporated for compliance.

3.2 ETABS

Finite Element Method: The FEM approach is currently the most precise way available for calculating the base shear and deflection of multi-story buildings. For application in Civil Engineering applications, a number of FEM software tools have been developed and are easily available on the market. The acronym ETABS stands for "Extended Three-dimensional Analysis of Building System." Furthermore, CSi America is the distributor of ETABS, a well-known CSi product used for structural analysis, particularly building structure (Computers and Structures, Inc). The most widely used structural engineering analysis and design software worldwide, especially in structural and seismic engineering, is ETABS, a top program for building structure analysis.

ETABS offers unmatched modeling, analytical, design, and detailing methods in addition to a simple and robust graphical user interface. These methods are all integrated through the usage of a shared database. Structural engineers in the construction industry use ETABS because it is the fastest and easiest to use for small buildings, but it can handle the largest and most complex building models, including a wide range of linear behaviors needed for performance-based design. On the other hand, using FEM software to precisely model and analyze building structures requires a lot of time, especially when using linear and dynamic analytic techniques. The Finite Element procedure for structural analysis is a lengthy procedure even when it is valid.

3.3 MATLAB

3.3.1 ANN Architecture

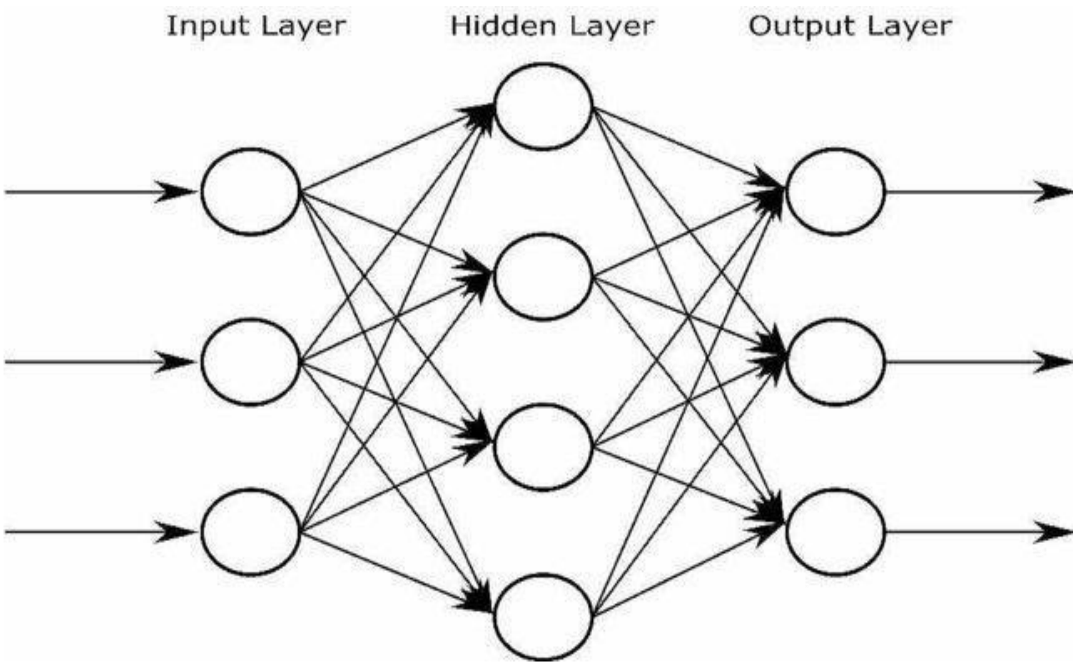

Fig. .3.1 Schematic diagram of ANNs (Source:(Behera et al., 2024))

The ANN architecture consists of 3 layers: input layer, hidden layer, and output layer (Fig. 1.1 shows the schematic diagram of ANN model).

In our case, input layer has six neurons, each of which represents one of the following six input parameters: floor number, story height, beam depth, beam width, column depth, and column width.In addition, the hidden layer comprises 30 neurons.

In contrast, the output layer contains a single neuron to represent base shear. The input, hidden, and output layer representation of the ANN model is shown in Fig. Once the ANN has been fed the target base shear and deflection from the modal response spectrum analysis, errors and the prediction rate are computed.

To obtain the maximum prediction rate, trial and error is used to choose the hidden layer's neuron count as well as training parameters including learning rate, momentum coefficient, and variable normalization range. The purpose of this architecture is to teach the neural network to forecast base shear and deflection for every given G+7 story RC building model with similar dimension.

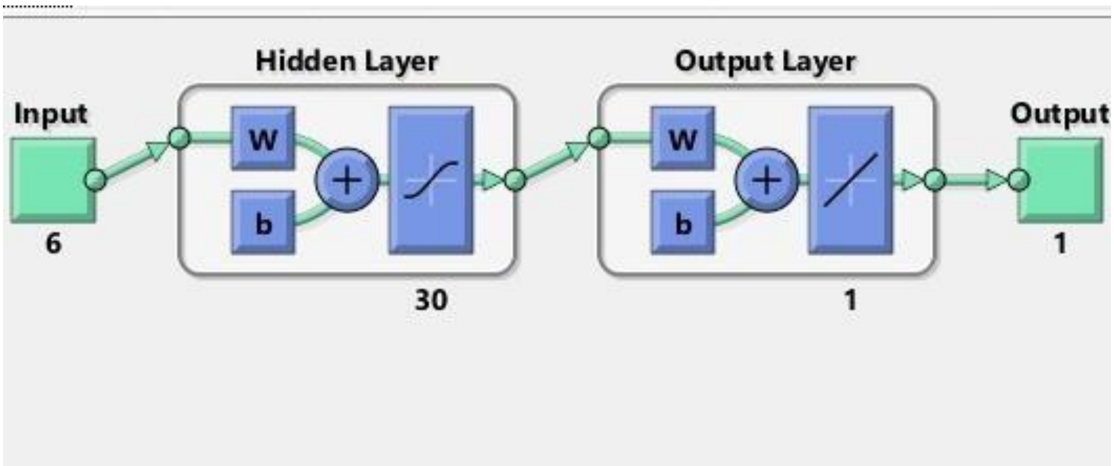

Fig. 3.2 - Schematic diagram of ANNs (Source:ETABS)

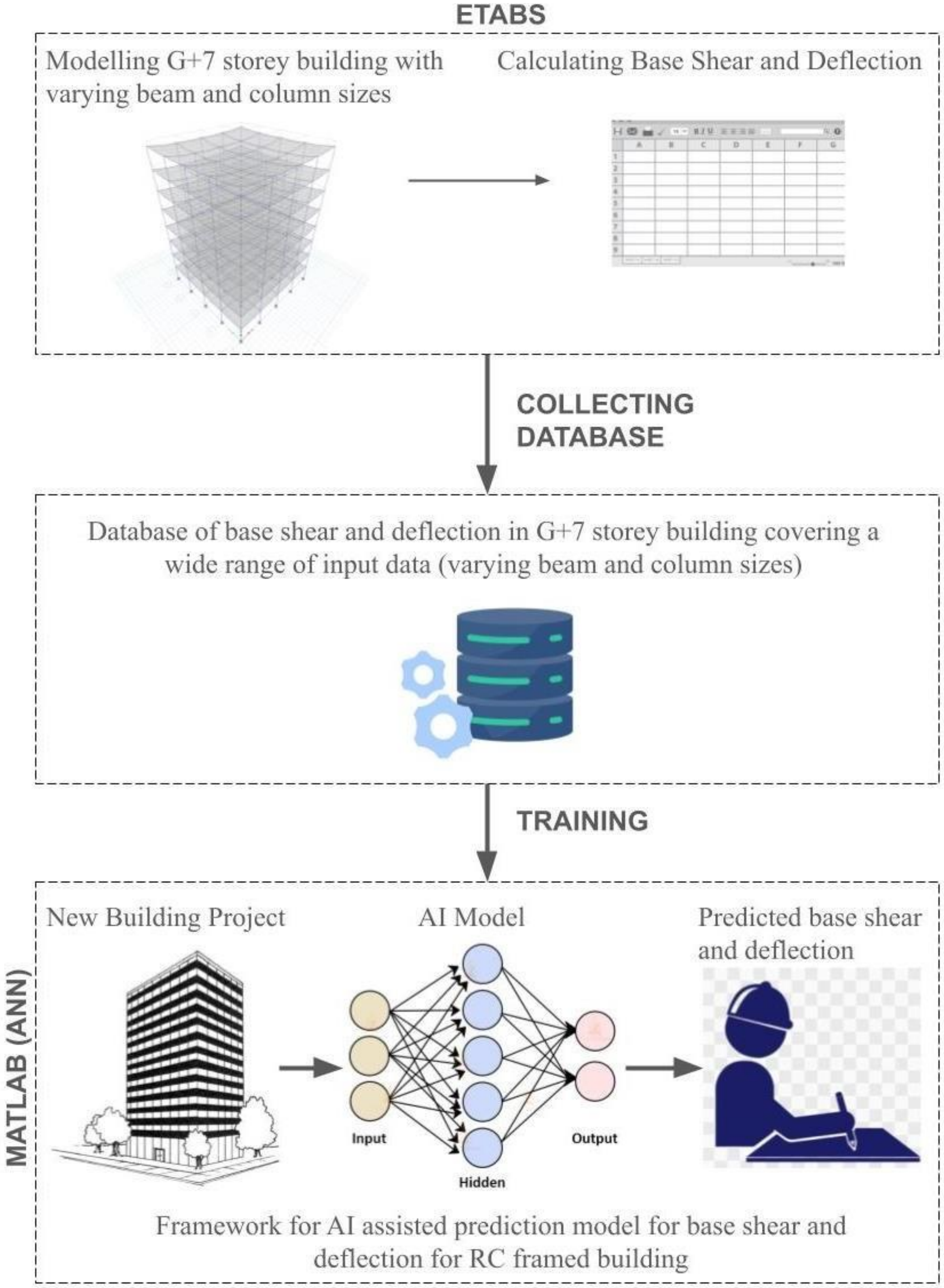

Fig.3.3 depicts a conceptual flowchart of our entire research

3.4 INPUT VARIABLE

3.4.1 ETABS

In the ETABS analysis, various input parameters have been defined to calculate the base shear and deflection of the structure. The model comprises M-25 rectangular columns with varying depths ranging from 350 x 350 to 600 x 600, reinforced with Hysd 415 bars and tie bars of mild 250 steel, with a clear cover of 60 mm. The longitudinal bars are also Hysd 415, with tie bars of 10 mm diameter and a clear cover of 40 mm. The slab section, constructed with M25 concrete and a thickness of 150 mm, adds to the structural configuration. Seismic loads, as per IS1893 (Part 1):2016, are considered, with a seismic zone factor of 0.36, corresponding to zone 4, a response reduction factor (R) of 5, and an importance factor of 1.5.

Additionally, uniform loads, live loads of 3 kN/m2, and dead loads of 1.25 kN/m2 are assigned. The structure's restraints at the building bottom are fixed joints, and the soil condition is categorized as silt type II, factored in using the lumped mass method. These inputs collectively inform the ETABS analysis to determine the base shear and deflection characteristics of the structure under specified loading and seismic conditions.

3.4.2 MATLAB

In MATLAB, the construction and training of an Artificial Neural Network (ANN) involve several key specifications. The network type is defined as free forward backpropagation, indicating its ability to adapt and learn from input data through multiple layers. The training function selected is t=TRAINLM, facilitating the use of the Levenberg-Marquardt optimization algorithm for efficient network training. The adaptation function, LEARNGDM, governs the adjustment of connection weights during training, optimizing the network's performance. The performance function is set to Mean Squared Error (MSE), allowing for the evaluation of the network's accuracy in approximating target outputs.

The network comprises two layers, with the first layer containing 30 neurons configured with the TANSIG transfer function, which introduces non-linearities into the network. The second layer, serving as the output layer, consists of a single neuron utilizing the PURELIN transfer function to produce continuous output values. These specifications collectively define the architecture and training process of the ANN model in MATLAB, enabling the development of effective and adaptable neural networks for various applications.

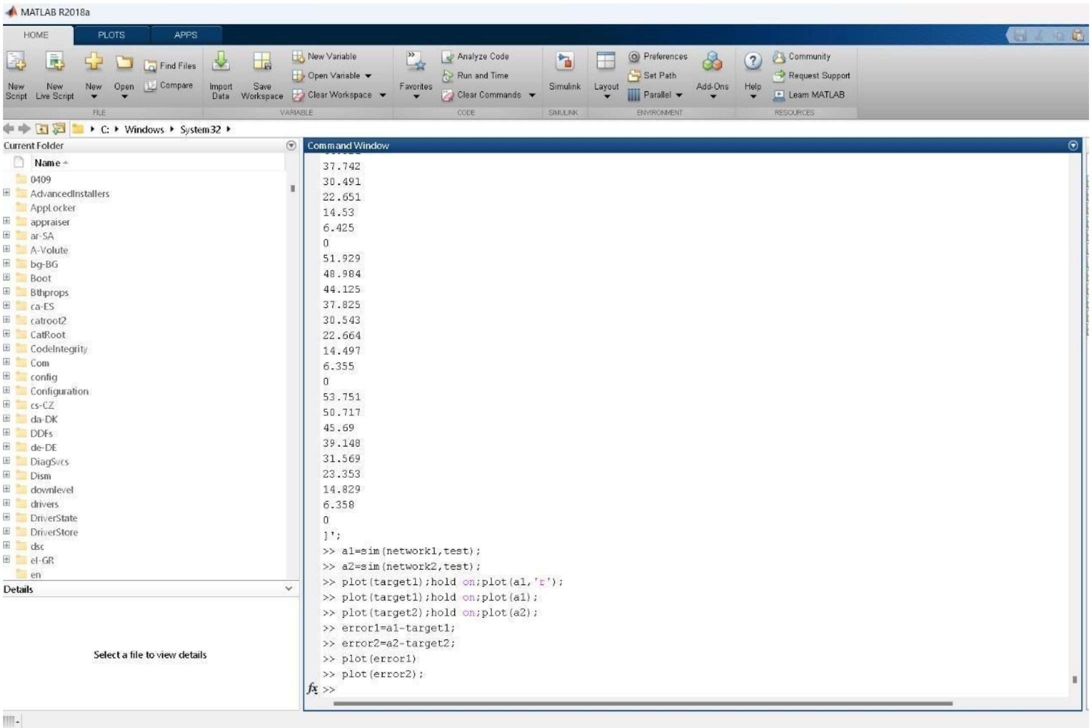

Fig. 3.4 - User interface of MATLAB

3.5 MODELING AND CALCULATION OF BASE SHEAR AND DEFLECTION ON ETABS

3.5.1 Building Dimensions

The building has dimensions of 16 meters by 16 meters, with each floor standing at a height of 3 meters. It consists of a ground floor plus seven additional stories, making it a total of eight floors. The structure maintains symmetry throughout, with a column-to-column distance of 4 meters, resulting in 25 columns per floor. Additionally, the beam-to-beam distance is also 4 meters, with a total of 40 beams per floor. This layout ensures stability and uniformity in the construction.

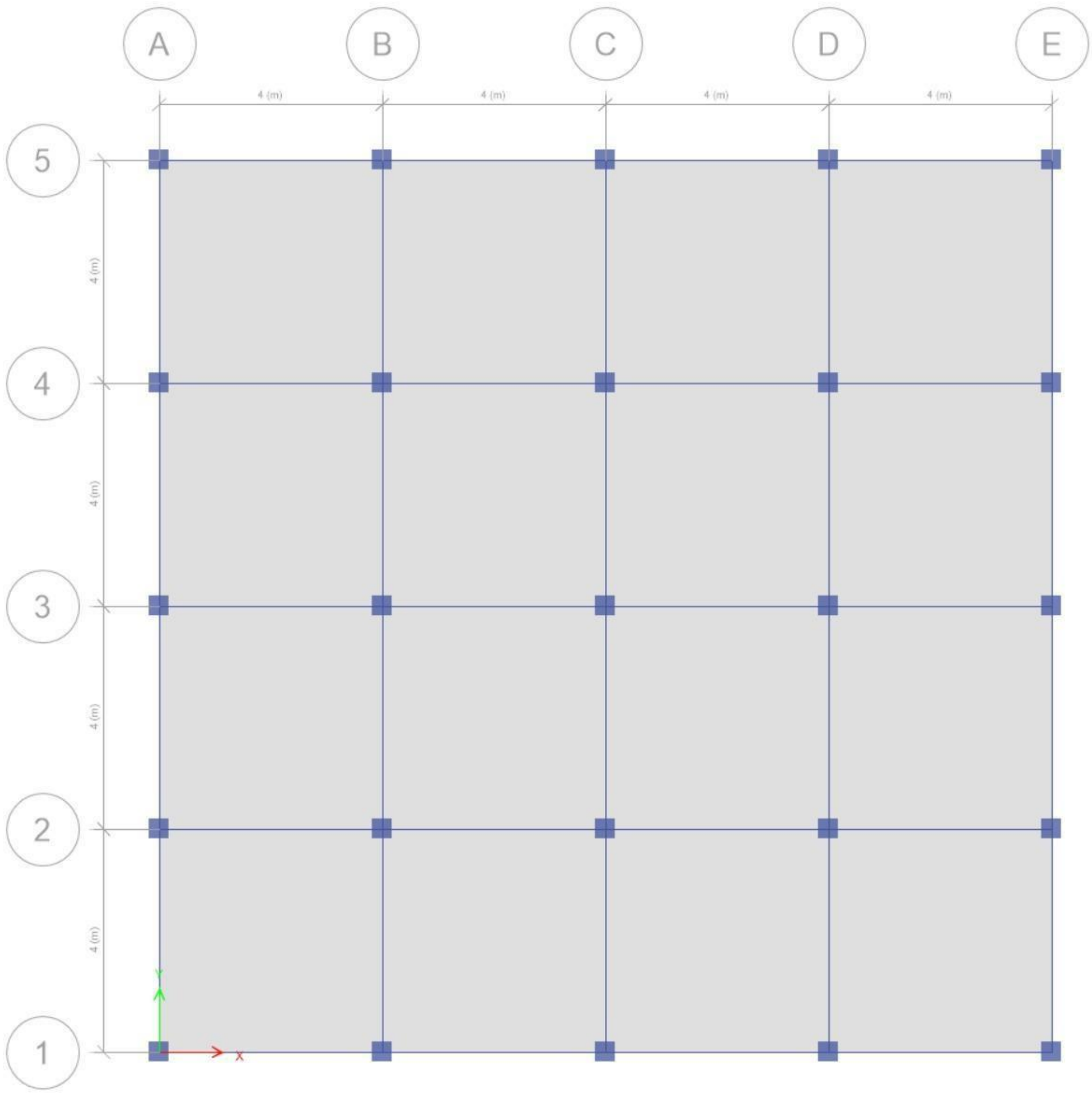

Fig.3.5 shows the plan of the G+7 story building, highlighting the column layout

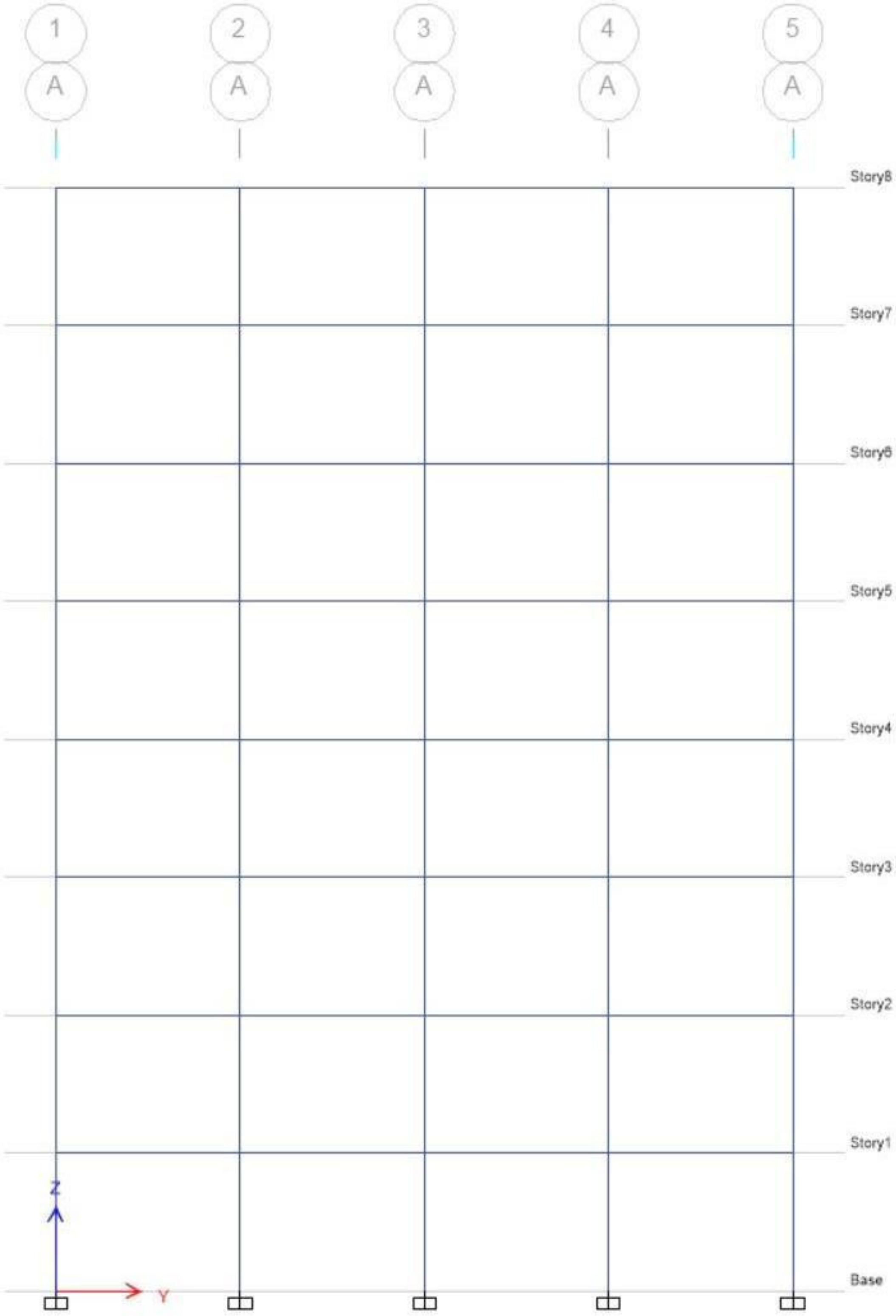

Fig. 3.6 shows the structural elevation of the G+7 story building

3.5.2 Structural Modeling

The structural modeling began with making a 3D structural model of the G+7 story building in ETABS, including columns, beams, slabs, and other structural elements. Material properties such as concrete grade was taken to be M-25 KN/m^2, the model comprises M-25 rectangular columns with varying depths ranging from 350 x 350 to 600 x 600, reinforced with HYSD 415 bars and tie bars of mild 250 steel, with a clear cover of 60 mm. The longitudinal bars are also HYSD 415, with tie bars of 10 mm diameter and a clear cover of 40 mm. The slab section, constructed with M25 concrete and a thickness of 150 mm, adds to the structural configuration.

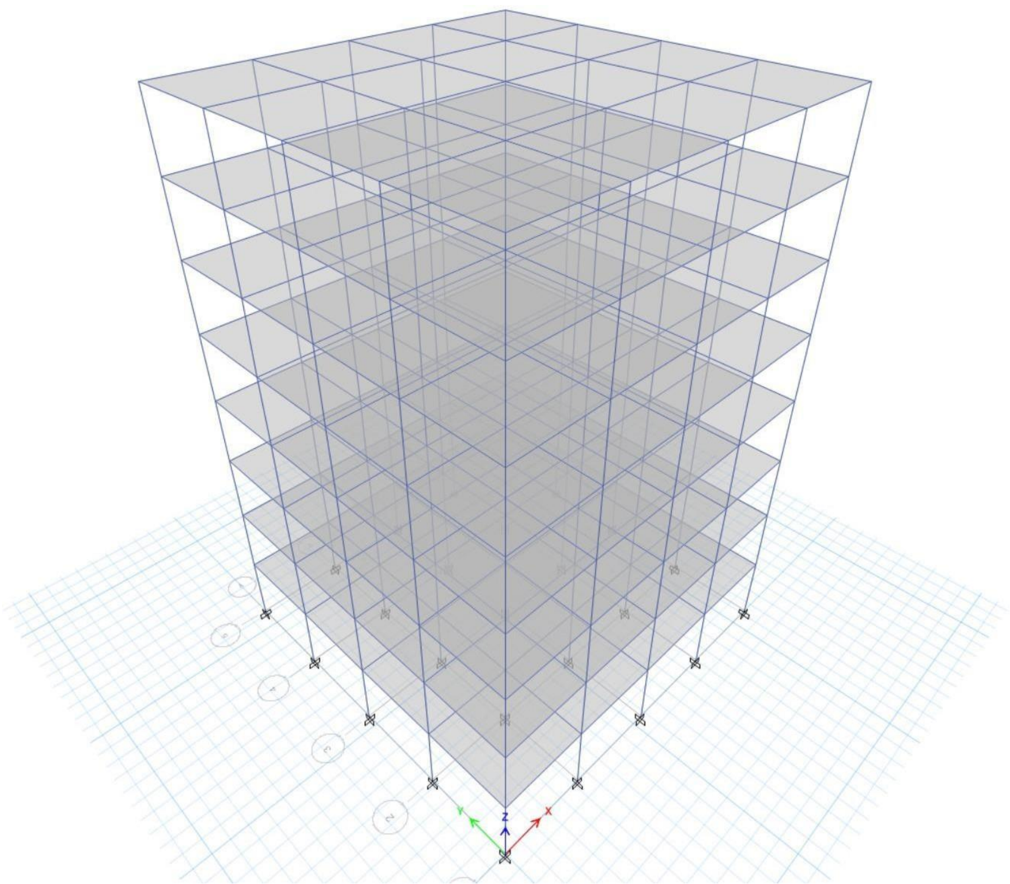

Fig 3.7 showing the G+7 story building modeled on ETABS

3.5.3 Loading Definition

The seismic loads according to the relevant design code, IS1893 (Part 1):2016 are used with a seismic zone factor of 0.24, corresponding to zone IV (as per table 2), a response reduction factor (R) of 5, and an importance factor of 1.5. Additionally, uniform loads, live loads of 3 KN/m2, and dead loads of 1.25 KN/m2 are assigned.

3.5.4 Support Conditions

The support conditions for the building, includes the structure's restraints at the building bottom are fixed joints, and the soil condition is categorized as soil type II (given below in table 1). Further, the lumped mass method is used along relevant parameters, which influence the building's response to seismic forces.

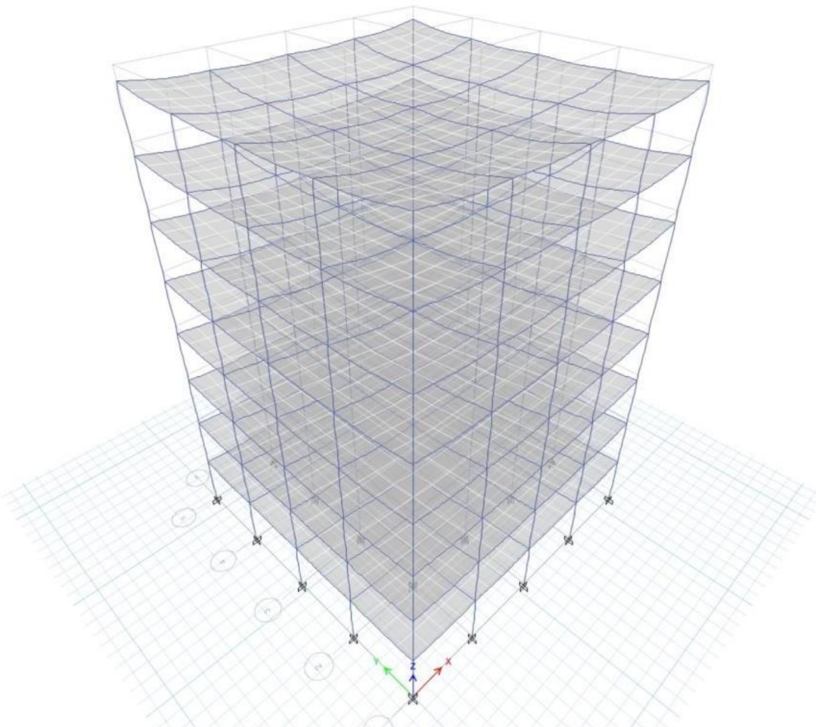

Fig 3.8 showing the G+7 story building after loading condition as per IS 1893 (Part1) 2016 on ETABS

According to IS1893 (Part 1) 2016 is utilized to identify the suitable spectrum to be utilized in the estimation of (Sa/g), the soil type upon which the structure is situated will be determined by the categorization provided in Table , which is as follows:

Soil type I	Rock or hard soils
Soil type II	Medium or stiff soils
Soil type III	Soft soils

Table 1 – classification of soil type

Seismic Zone factor	**Zone II**	**Zone III**	**Zone IV**	**Zone V**
Z	0.10	0.16	0.24	0.36

Table 2 Seismic Zone Factor Z (According to Clause 6.4.2 of IS 1893, 2016 (Part 1)

3.5.5 Analysis Setup

The analysis method used is the lumped mass method, for calculating the building's response to seismic loads in ETABS, the structural model is simplified by lumping the mass of the building's components at discrete points or nodes. The mass of the building is distributed at key locations or nodes, typically at the center of mass of each floor level or at column intersections. This distribution allows for the representation of the building's mass properties while minimizing computational efforts. While the lumped mass method primarily focuses on the mass distribution, the stiffness of the structural elements (columns, beams, slabs) is also considered.

Later, ETABS performs a dynamic analysis to calculate the building's response to seismic loads. The analysis considers the modal properties of the structure, including natural frequencies, mode shapes, and modal masses. ETABS calculates various response parameters, including base shear, inter-story drift, and deflection at critical locations. These parameters provide valuable insights into the building's behavior under seismic loading.

3.6 DEVELOPMENT OF ANN MODEL

To develop an Artificial Neural Network (ANN) model for predicting base shear in structural engineering, the architecture is structured as follows: The input layer consists of six neurons, each representing a distinct input parameter: floor number, story height, beam depth, beam width, column depth, and column width. Following this, the hidden layer encompasses 30 neurons, facilitating the processing of the input data. Finally, the output layer contains a single neuron to predict the base shear. The development process begins with data collection, gathering a dataset comprising input parameters and corresponding base shear values. Subsequently, data preprocessing ensures cleanliness and normalization for effective training.

With the architecture defined, the model undergoes training using a portion of the dataset, iteratively adjusting weights and biases through backpropagation to minimize error. Evaluation on a validation set gauges model performance, allowing for fine-tuning of hyperparameters and architecture. This iterative process continues until satisfactory performance is achieved. Finally, the model undergoes testing on a separate test set for unbiased evaluation before deployment for real-world predictions. Throughout this process, documentation of methodology and decisions ensures transparency and reproducibility, facilitating further refinement and iteration as needed.

3.7 VALIDATION OF NEURAL NETWORK

Once the ANN model is trained, validating the obtained data is crucial to ensure its reliability and generalization to new, unseen data. Validation involves assessing how well the model performs on data it hasn't been trained on, thus providing insights into its ability to make accurate predictions in real-world scenarios. The validation process typically involves using a separate portion of the dataset that was not used during training, known as the validation set. This set serves as a proxy for unseen data and helps gauge how well the model can generalize beyond the training data. Various metrics can be employed to evaluate the model's performance on the validation set, such as Mean Squared Error (MSE), Mean Absolute Error (MAE), or correlation coefficients between predicted and actual values.

By comparing the model's predictions on the validation set with the ground truth values, one can assess its accuracy, precision, and robustness. If the model performs well on the validation set, it suggests that it has learned meaningful patterns from the training data and can generalize to new instances effectively. However, if the performance on the validation set is poor, it may indicate issues like overfitting or underfitting, which require further adjustments to the model architecture or training process.

Additionally, validation is an iterative process, often accompanied by fine-tuning of hyperparameters and model architecture based on the insights gained from the validation results. This iterative cycle continues until the model demonstrates satisfactory performance on both the training and validation sets, ensuring its reliability for making predictions in real-world applications.

CHAPTER 4

RESULTS AND DISCUSSIONS

4.1 GENERAL

4.2DATASET TRAINING DISCUSSION

In this MATLAB dataset training scenario, we're utilizing an Artificial Neural Network (ANN) for predicting Base Shear and Deflection values. Our input dataset (I) comprises 2952 instances, and we have corresponding training values for Base Shear (T1) and Deflection (T2). Two separate ANN models, Network 1 and Network 2, are trained using this data, each specialized for predicting Base Shear and Deflection, respectively.

After training, we employ these trained models to predict Base Shear and Deflection values for a test dataset (test) who's actual values are already known. This test dataset consists of instances for which we also have target values: target 1 for Base Shear and target 2 for Deflection. Utilizing Network 1 and Network 2, we generate datasets of predicted Base Shear values (a1) and predicted Deflection values (a2).

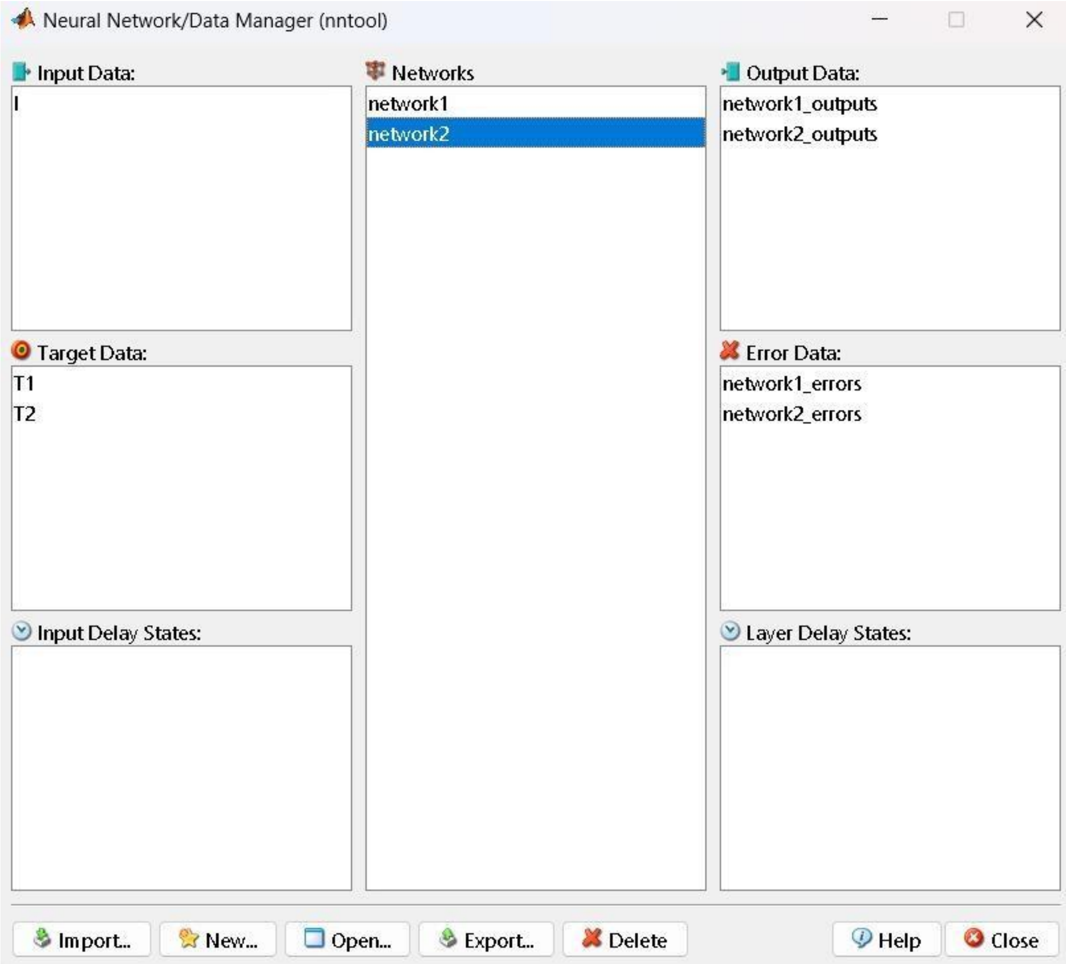

Fig.4.1 shows the user interface to train the dataset

With our predictions in hand, we proceed to evaluate their accuracy. We calculate errors for both Base Shear and Deflection predictions. Error 1 represents the discrepancy between predicted Base Shear values (a1) and their corresponding target values (target 1), while Error 2 captures the difference between predicted Deflection values (a2) and their respective targets (target 2). Each of these error datasets provides insights into the performance of our ANN models in predicting Base Shear and Deflection accurately.

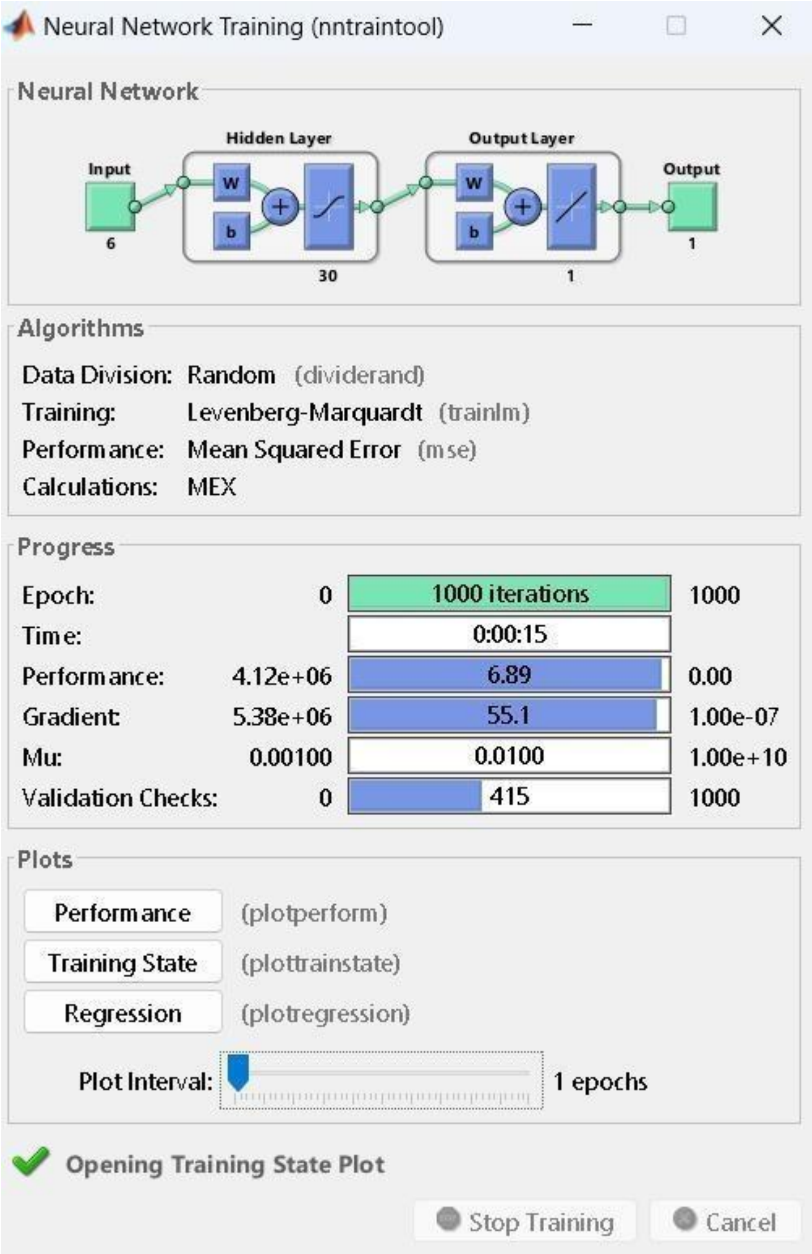

Fig.4.2 showing training of AI for prediction of Base Shear

Our Input dataset is also a subset of the original dataset consisting of 4212 instances obtained from ETABS. This may suggest selective evaluation or application of the models based on specific criteria or constraints.

Fig. 4.3 showing training of AI for prediction of Base Shear

Furthermore, it's worth noting that although our input dataset and training dataset both consist of 2952 instances, the dataset of predicted Base Shear and Deflection values comprises 1260 instances individually, implying that our trained models have been applied to a subset of the original dataset for prediction purposes. Overall, through this systematic approach, we aim to leverage ANN models for precise prediction of Base Shear and Deflection values, thereby facilitating analysis and decision-making in relevant engineering or scientific contexts.

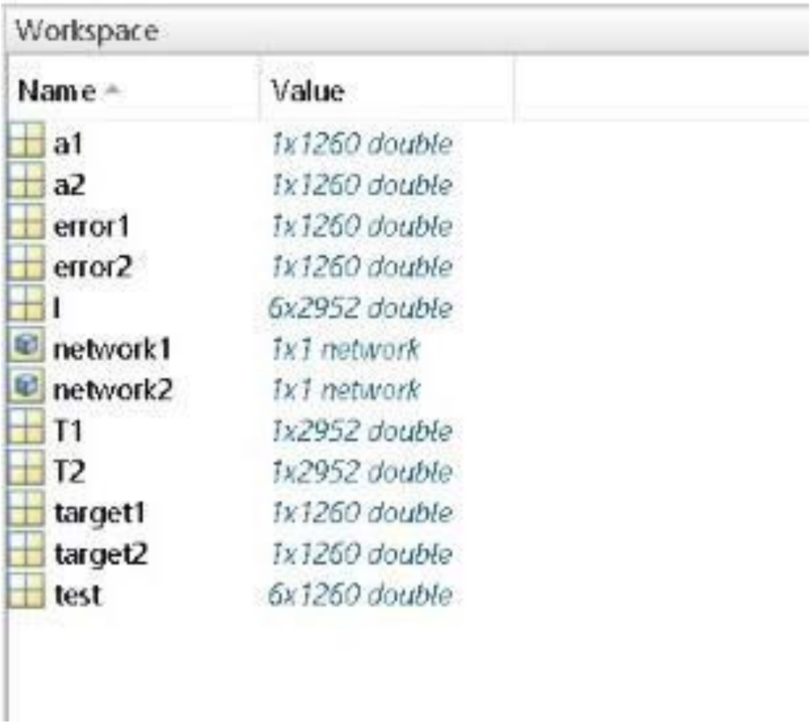

Fig.4.4 showing the overall results in the MATLAB user interface

I=Input dataset for training of ANN model

T1= Training values for input dataset for Base Shear

T2= Training values for input dataset for Deflection

Network 1 = Trained ANN model for Base Shear prediction

Network 2 = Trained ANN model for Deflection prediction

test = Input dataset for testing of ANN model

target 1= target values for test dataset for Base Shear

target 2= target values for test dataset for Deflection

a1= Dataset of predicted Base Shear values

a2= Dataset of predicted Deflection values

error 1= a1- target 1(predicted values - actual values of Base Shear)

error 2= a2- target 2(predicted values - actual values of Deflection)

4.3COMPARISON BETWEEN ACTUAL VS PREDICTED VALUES FOR BASE SHEAR

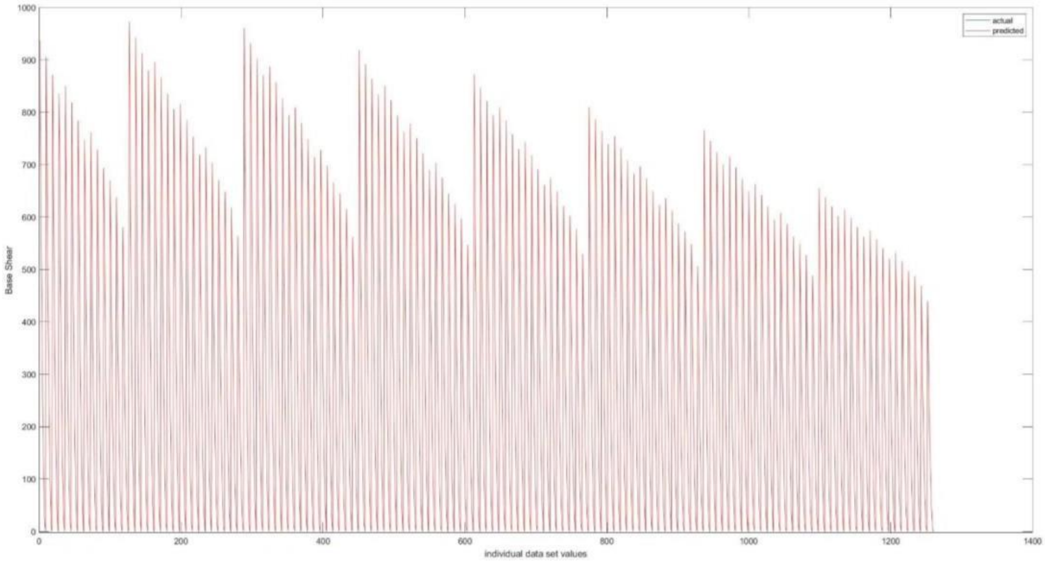

Fig. 4.5 comparing actual and predicted base shear value for each data instance (up to 1260 dataset)

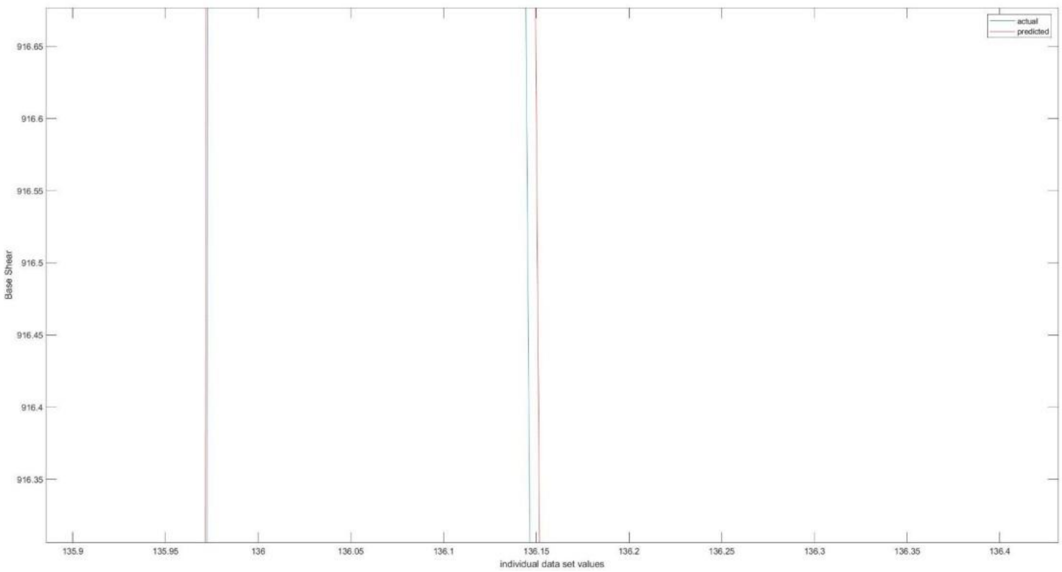

Fig. 4.6 showing zoomed in graph for actual and predicted base shear value

In comparing the actual versus predicted values for Base Shear, several metrics provide insight into the performance of the prediction model as shown in the fig..The values highlighted in blue depicts actual values of Base Shear whereas the ones represented in red are the predicted values. It is evident that both seem to overlap in the shown fig. but it still has minor differences as shown in a zoomed in depiction in fig. The mean squared error (MSE) is calculated to be 0.61194, indicating the average squared difference between the predicted and actual Base Shear values. This relatively low MSE suggests that, on average, the model's predictions are close to the actual values.

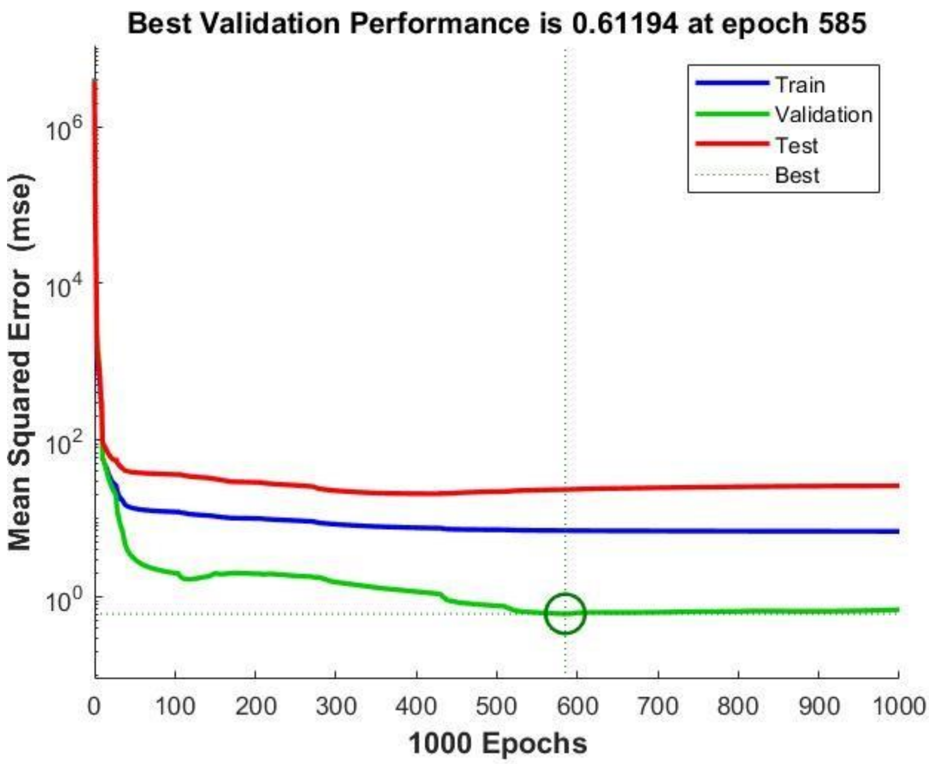

Fig. 4.7 showing the MSE values at different iterations of ANN for Base Shear

Examining the error range, we find discrepancies between the predicted and actual values ranging from a maximum of 5 kN to -2 kN. This variation demonstrates the model's ability to capture the nuances of the Base Shear values across the dataset. Considering the average of the targeted value, which is calculated to be 261.7194 kN, we gain perspective on the central tendency of the Base Shear values in the dataset.

This average serves as a benchmark for evaluating the model's accuracy in predicting values around this mean.

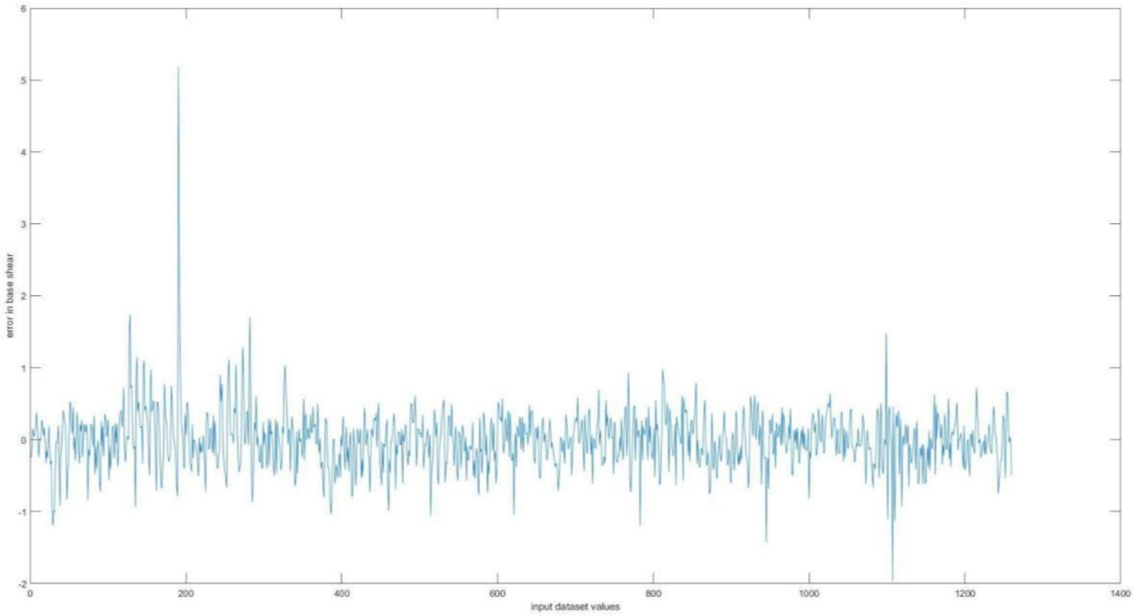

Fig. 4.8 showing the error graph of Base Shear (Predicted value - Actual value)

Calculation of Scatter Index:

Scatter Index = (RMSE/Average of targeted value) x 100

Scatter Index = (0.7823/261.7194) x 100

Scatter Index = 0.2988 %

Where,

Average of test values = 261.7194

MSE=0.61194

RMSE= 0.7823

The scatter index, calculated at 0.2988%, reflects the percentage difference between the predicted and actual Base Shear values. With a scatter index of less than 1%, the model's predictions are deemed highly accurate, reaching approximately 99.7%

accuracy in this comparison.

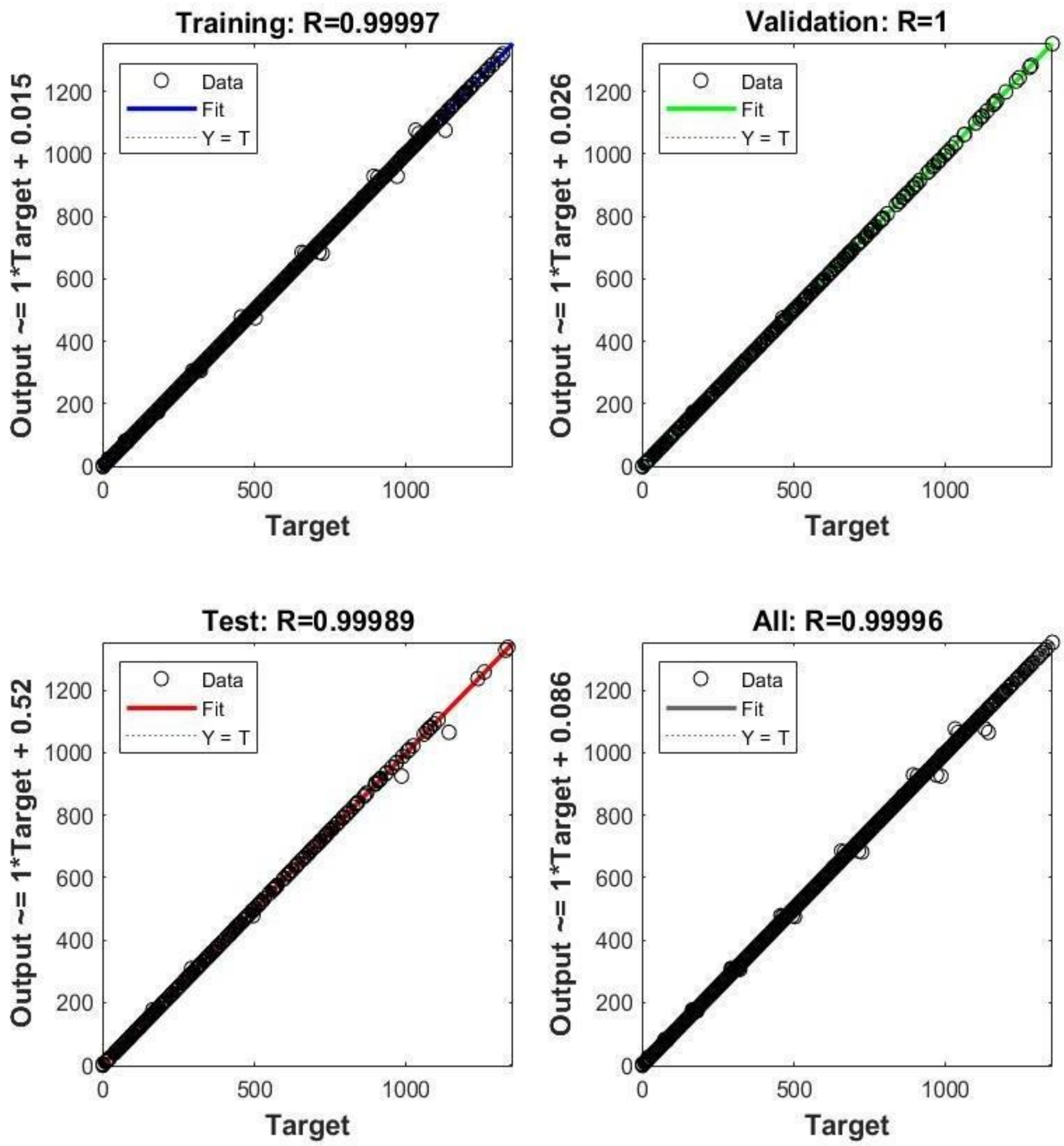

Fig. 4.9 showing the regression graphs of Base Shear ANN model

Furthermore, the corresponding R value for the network is reported as 0.99996, indicating an extremely strong linear relationship between the predicted and actual Base Shear values. This high R value yields an R square value of 0.99992, signifying that approximately 99.992% of the variability in the actual Base Shear values can be explained by the model's predictions. Overall, these metrics collectively underscore the exceptional performance of the model in accurately predicting Base Shear values, demonstrating its reliability and effectiveness in capturing the underlying patterns within the dataset.

4.4COMPARISON BETWEEN ACTUAL VS PREDICTED VALUES FOR BASE SHEAR

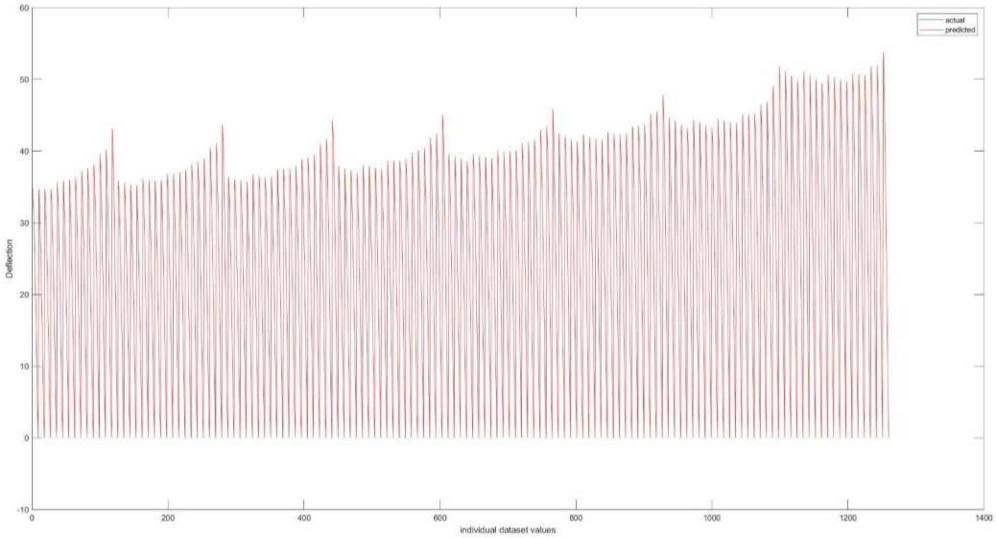

Fig. 4.10 comparing actual and predicted deflection value for each data instance (upto 1260 dataset)

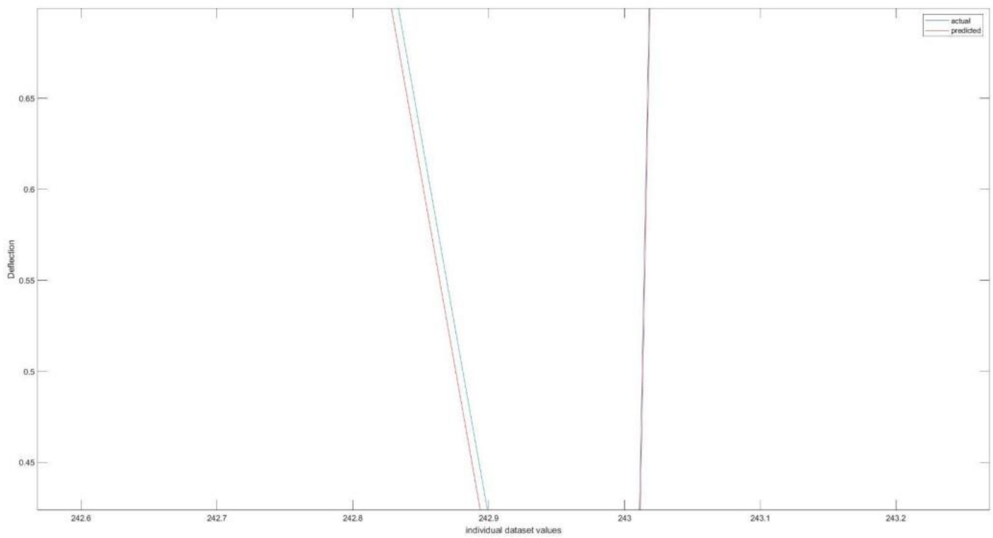

Fig. 4.11 showing zoomed in graph for actual and predicted deflection value

In comparing the actual versus predicted values for Deflection, key metrics shed light on the performance of the prediction model as seen in fig. . The values highlighted in blue depict actual values of deflection whereas the ones represented in red are the predicted values. It is evident that both seem to overlap in the shown fig. but it still has minor differences as shown in a zoomed-in depiction in fig.

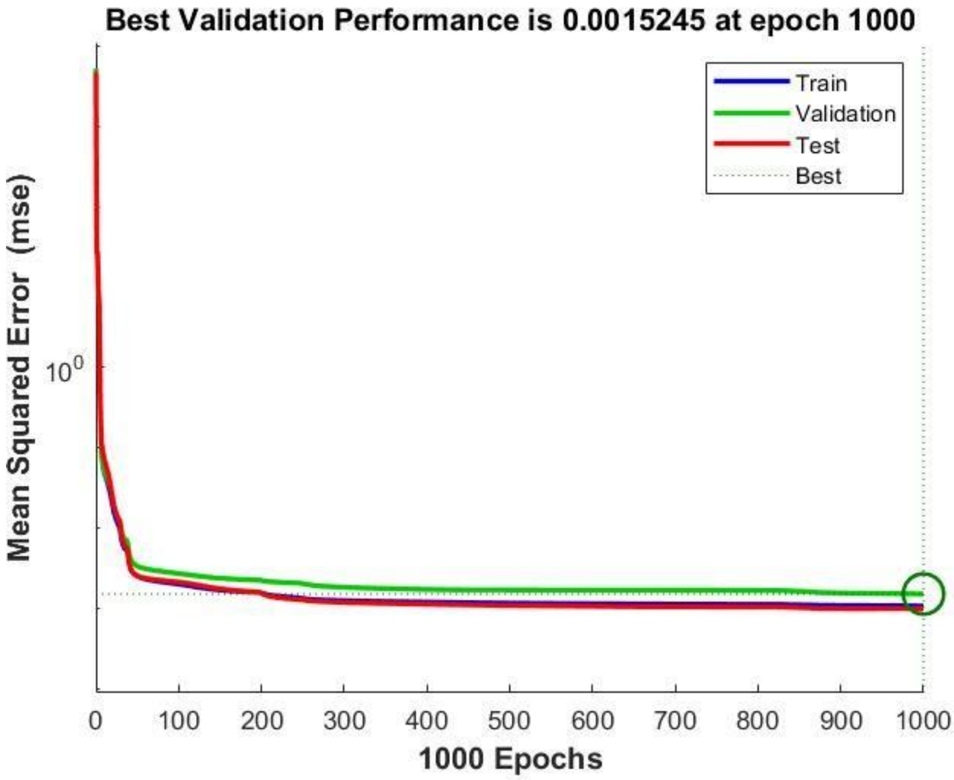

Fig. 4.12 showing the MSE values at different iterations of ANN for Deflection

The mean squared error (MSE) is computed at 0.0015245, indicating the average squared difference between the predicted and actual Deflection values. This low MSE suggests that, on average, the model's predictions closely match the actual values of Deflection.

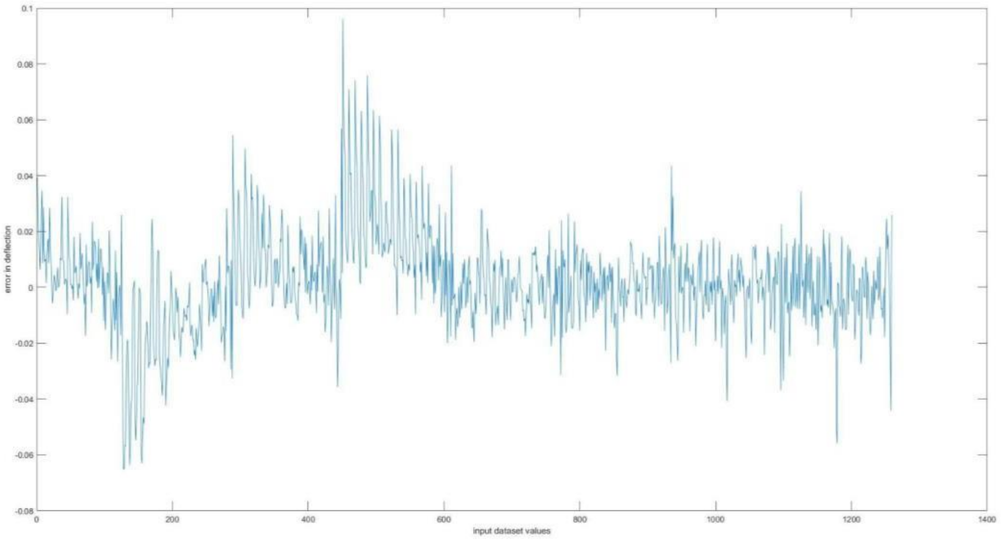

Fig. 4.13 showing the error graph of Deflection (Predicted value - Actual value)

Examining the error range, we find discrepancies between the predicted and actual values ranging from a maximum of 0.1 KN to -0.065 KN. This variation illustrates the model's ability to capture the nuances of the Deflection values across the dataset. Considering the average of the targeted value, which is calculated to be 22.65528 KN, we gain insight into the central tendency of the Deflection values in the dataset. This average serves as a reference point for evaluating the model's accuracy in predicting values around this mean.

Calculation of Scatter Index:

Scatter Index = (RMSE/Average of targeted value) x 100

Scatter Index = (0.039/22.65523) x 100

Scatter Index = 0.1723 %

Where,

Average of test values= 22.65523

MSE=0.001525

RMSE= 0.039

The scatter index, calculated at 0.1723%, reflects the percentage difference between the predicted and actual Deflection values. With a scatter index of less than 1%, the model's predictions are highly accurate, reaching approximately 99.8% accuracy in this comparison.

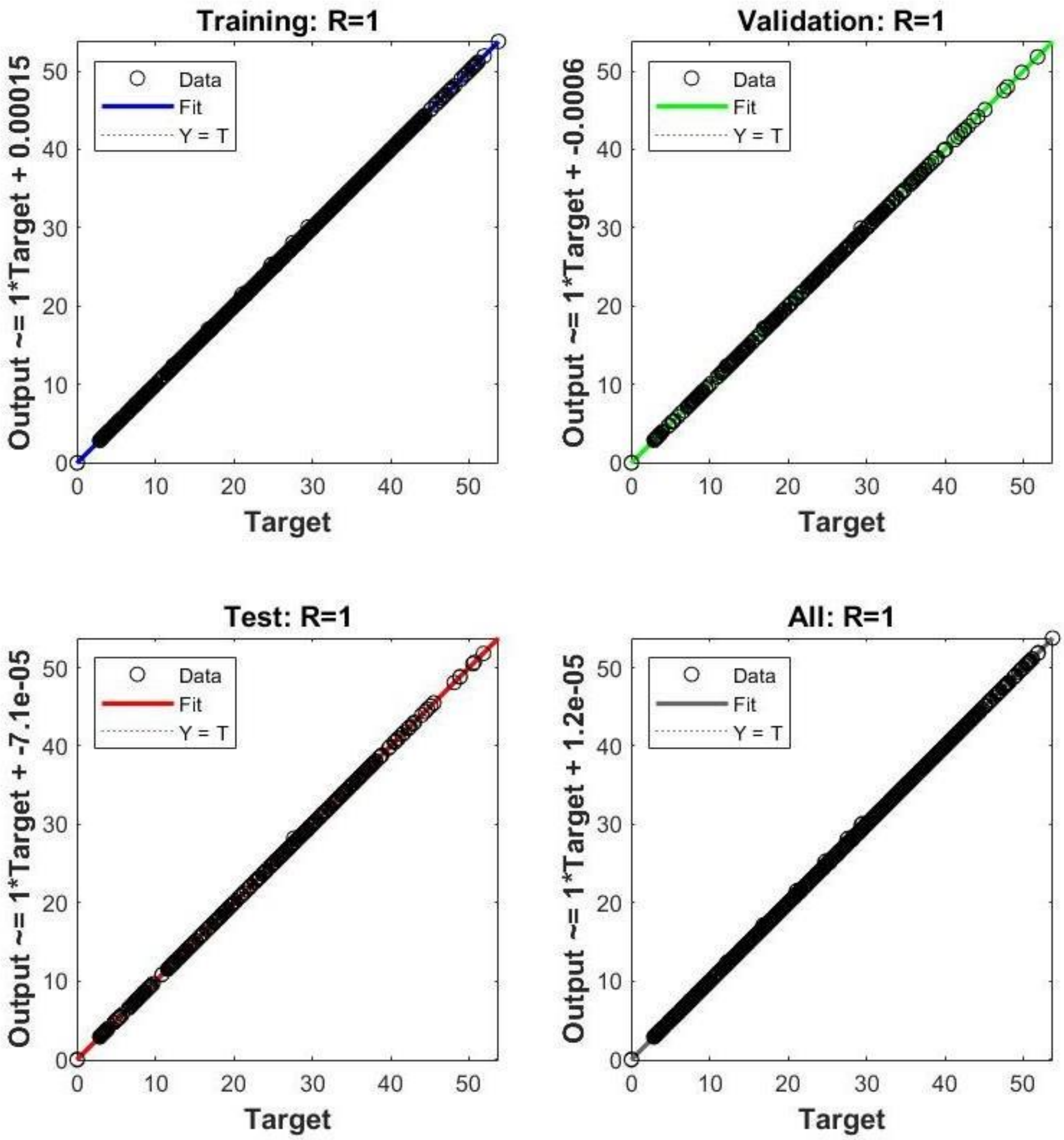

Fig. 4.14 showing the regression graphs of Deflection ANN model

Furthermore, the corresponding R value for the network is reported as 1, indicating a perfect linear relationship between the predicted and actual Deflection values. This high R value yields an R square value of 1, suggesting that 100% of the variability in the actual Deflection values can be explained by the model's predictions. Overall, these metrics collectively highlight the exceptional performance of the model in accurately predicting Deflection values, demonstrating its reliability and effectiveness in capturing the underlying patterns within the dataset.

4.5SUMMARY OF RESULTS

	MSE	**RMSE**	**Scatter Index (SI)**	**Accuracy (in %)**
Base Shear	0.61194	0.782266	0.298894872	**99.7**
Deflection	0.001525	0.039045	0.172343268	**99.8**

Table 3 summarizes the overall accuracy for Base Shear and Deflection

CHAPTER 5

CONCLUSION

In conclusion, the utilization of Artificial Neural Networks (ANN) in the analysis of reinforced concrete buildings represents a significant advancement in structural engineering. ANN offers a versatile and powerful tool for predicting structural behavior under seismic loading conditions with improved accuracy and efficiency compared to traditional methods. The rate of prediction is computed as high as 99.7% for Base Shear and 99.8% for Deflection after 4212 iterations during ANN training using 2952 data sets and 1260 instances of test dataset. The MSE is 1.5×10^{-3} for Deflection and 6.1×10^{-1} for Base Shear.

This study suggests that artificial neural networks (ANNs) are a very promising technique for early structural response prediction, such as Base Shear and Deflection at multi-story buildings. The successful implementation of ANN in this study demonstrates its potential to not only enhance predictive accuracy but also to significantly reduce the computational time required for seismic analysis, which is critical for real-time applications. The ability of ANNs to generalize from training data and provide accurate predictions for unseen data underscores their robustness and reliability in diverse seismic scenarios.

FUTURE SCOPE OF WORK

ANN has the potential to revolutionize seismic analysis by offering a more efficient and accurate method compared to traditional approaches. With advancements in machine learning techniques and increased computational power, ANN can handle complex data sets and non-linear relationships inherent in seismic behavior. One potential application is the development of predictive models that can accurately estimate the response of reinforced concrete structures to seismic loading. These models can incorporate a wide range of parameters, including building geometry, material properties, ground motion characteristics, and structural details, to provide insights into structural performance under various earthquake scenarios.

Moreover, ANN can facilitate real-time monitoring and assessment of structural health during and after seismic events. By analyzing sensor data, such as accelerations, strains, and displacements, ANN models can quickly detect damage and provide early warnings, enabling proactive mitigation strategies and enhancing the resilience of buildings to seismic hazards. Furthermore, ANN-based optimization algorithms can be employed to design more earthquake-resistant structures by optimizing reinforcement layouts, material distributions, and structural configurations. This approach can lead to more cost-effective and sustainable building designs that meet or exceed seismic performance requirements. Overall, the future of ANN in seismic analysis holds immense potential for advancing the field of structural engineering, improving the safety and resilience of buildings, and mitigating the impact of seismic events on communities and infrastructure.

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APPENDIX

Dataset for training the ANN Model

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
8	24	600	600	600	600	1353.076	27.301
7	21	600	600	600	600	1154.9716	25.605
6	18	600	600	600	600	848.5505	22.949
5	15	600	600	600	600	589.2712	19.543
4	12	600	600	600	600	377.1336	15.631
3	9	600	600	600	600	212.1376	11.422
2	6	600	600	600	600	94.2834	7.098
1	3	600	600	600	600	23.5708	2.901
0	0	600	600	600	600	0	0
8	24	600	600	600	575	1328.5235	27.335
7	21	600	600	600	575	1136.0786	25.641
6	18	600	600	600	575	834.67	22.984
5	15	600	600	600	575	579.6319	19.573
4	12	600	600	600	575	370.9644	15.652
3	9	600	600	600	575	208.6675	11.431
2	6	600	600	600	575	92.7411	7.094
1	3	600	600	600	575	23.1853	2.889
0	0	600	600	600	575	0	0
8	24	600	600	600	550	1303.4383	27.383
7	21	600	600	600	550	1116.7258	25.689
6	18	600	600	600	550	820.4516	23.03
5	15	600	600	600	550	569.7581	19.612
4	12	600	600	600	550	364.6452	15.68
3	9	600	600	600	550	205.1129	11.445
2	6	600	600	600	550	91.1613	7.093
1	3	600	600	600	550	22.7903	2.877
0	0	600	600	600	550	0	0
8	24	600	600	600	525	1277.7709	27.445
7	21	600	600	600	525	1096.8678	25.751
6	18	600	600	600	525	805.8621	23.088
5	15	600	600	600	525	559.6264	19.661
4	12	600	600	600	525	358.1609	15.716
3	9	600	600	600	525	201.4655	11.465
2	6	600	600	600	525	89.5402	7.094
1	3	600	600	600	525	22.3851	2.865
0	0	600	600	600	525	0	0
8	24	600	600	600	500	1251.4653	27.525
7	21	600	600	600	500	1076.4532	25.829

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
6	18	600	600	600	500	790.8636	23.161
5	15	600	600	600	500	549.2108	19.723
4	12	600	600	600	500	351.4949	15.762
3	9	600	600	600	500	197.7159	11.491
2	6	600	600	600	500	87.8737	7.099
1	3	600	600	600	500	21.9684	2.855
0	0	600	600	600	500	0	0
8	24	600	600	575	575	1282.937	27.846
7	21	600	600	575	575	1099.0736	26.127
6	18	600	600	575	575	807.4827	23.425
5	15	600	600	575	575	560.7519	19.948
4	12	600	600	575	575	358.8812	15.942
3	9	600	600	575	575	201.8707	11.626
2	6	600	600	575	575	89.7203	7.188
1	3	600	600	575	575	22.4301	2.896
0	0	600	600	575	575	0	0
8	24	600	600	575	550	1258.5178	27.913
7	21	600	600	575	550	1080.1625	26.193
6	18	600	600	575	550	793.5888	23.486
5	15	600	600	575	550	551.1033	19.999
4	12	600	600	575	550	352.7061	15.98
3	9	600	600	575	550	198.3972	11.647
2	6	600	600	575	550	88.1765	7.19
1	3	600	600	575	550	22.0441	2.886
0	0	600	600	575	550	0	0
8	24	600	600	575	525	1233.5452	27.995
7	21	600	600	575	525	1060.7679	26.273
6	18	600	600	575	525	779.3397	23.561
5	15	600	600	575	525	541.2081	20.062
4	12	600	600	575	525	346.3732	16.027
3	9	600	600	575	525	194.8349	11.673
2	6	600	600	575	525	86.5933	7.195
1	3	600	600	575	525	21.6483	2.875
0	0	600	600	575	525	0	0
8	24	600	600	575	500	1207.9637	28.095
7	21	600	600	575	500	1040.8385	26.37
6	18	600	600	575	500	764.6977	23.65
5	15	600	600	575	500	531.0401	20.138
4	12	600	600	575	500	339.8656	16.083
3	9	600	600	575	500	191.1744	11.706
2	6	600	600	575	500	84.9664	7.203
1	3	600	600	575	500	21.2416	2.865
0	0	600	600	575	500	0	0

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
8	24	600	600	575	475	1181.711	28.216
7	21	600	600	575	475	1020.317	26.487
6	18	600	600	575	475	749.6206	23.758
5	15	600	600	575	475	520.5699	20.228
4	12	600	600	575	475	333.1647	16.15
3	9	600	600	575	475	187.4052	11.746
2	6	600	600	575	475	83.2912	7.214
1	3	600	600	575	475	20.8228	2.856
0	0	600	600	575	475	0	0
8	24	600	600	550	550	1212.4467	28.512
7	21	600	600	550	550	1042.5359	26.761
6	18	600	600	550	550	765.9448	24.001
5	15	600	600	550	550	531.9061	20.435
4	12	600	600	550	550	340.4199	16.317
3	9	600	600	550	550	191.4862	11.872
2	6	600	600	550	550	85.105	7.298
1	3	600	600	550	550	21.2762	2.897
0	0	600	600	550	550	0	0
8	24	600	600	550	525	1188.2155	28.615
7	21	600	600	550	525	1023.6427	26.861
6	18	600	600	550	525	752.064	24.092
5	15	600	600	550	525	522.2667	20.512
4	12	600	600	550	525	334.2507	16.374
3	9	600	600	550	525	188.016	11.905
2	6	600	600	550	525	83.5627	7.307
1	3	600	600	550	525	20.8907	2.887
0	0	600	600	550	525	0	0
8	24	600	600	550	500	1163.4117	28.737
7	21	600	600	550	500	1004.2431	26.978
6	18	600	600	550	500	737.8112	24.199
5	15	600	600	550	500	512.3689	20.602
4	12	600	600	550	500	327.9161	16.442
3	9	600	600	550	500	184.4528	11.945
2	6	600	600	550	500	81.979	7.319
1	3	600	600	550	500	20.4948	2.879
0	0	600	600	550	500	0	0
8	24	600	600	550	475	1137.9734	28.882
7	21	600	600	550	475	984.2799	27.116
6	18	600	600	550	475	723.1444	24.325
5	15	600	600	550	475	502.1836	20.707
4	12	600	600	550	475	321.3975	16.521
3	9	600	600	550	475	180.7861	11.993
2	6	600	600	550	475	80.3494	7.334

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
1	3	600	600	550	475	20.0873	2.871
0	0	600	600	550	475	0	0
8	24	600	600	550	450	1111.8317	29.052
7	21	600	600	550	450	963.6894	27.278
6	18	600	600	550	450	708.0167	24.472
5	15	600	600	550	450	491.6783	20.831
4	12	600	600	550	450	314.6741	16.613
3	9	600	600	550	450	177.0042	12.05
2	6	600	600	550	450	78.6685	7.354
1	3	600	600	550	450	19.6671	2.864
0	0	600	600	550	450	0	0
8	24	600	600	525	425	1141.9007	29.314
7	21	600	600	525	425	985.5857	27.521
6	18	600	600	525	425	724.1038	24.687
5	15	600	600	525	425	502.8499	21.015
4	12	600	600	525	425	321.8239	16.762
3	9	600	600	525	425	181.0259	12.164
2	6	600	600	525	425	80.456	7.431
1	3	600	600	525	425	20.114	2.902
0	0	600	600	525	425	0	0
8	24	600	600	525	500	1117.9233	29.46
7	21	600	600	525	500	966.7567	27.659
6	18	600	600	525	500	710.2702	24.813
5	15	600	600	525	500	493.2432	21.12
4	12	600	600	525	500	315.6757	16.841
3	9	600	600	525	500	177.5676	12.211
2	6	600	600	525	500	78.9189	7.447
1	3	600	600	525	500	19.7297	2.895
0	0	600	600	525	500	0	0
8	24	600	600	525	475	1093.3568	29.629
7	21	600	600	525	475	947.4009	27.82
6	18	600	600	525	475	696.0496	24.959
5	15	600	600	525	475	483.3678	21.242
4	12	600	600	525	475	309.3554	16.932
3	9	600	600	525	475	174.0124	12.267
2	6	600	600	525	475	77.3388	7.466
1	3	600	600	525	475	19.3347	2.888
0	0	600	600	525	475	0	0
8	24	600	600	525	450	1068.1326	29.825
7	21	600	600	525	450	927.4546	28.005
6	18	600	600	525	450	681.3952	25.126
5	15	600	600	525	450	473.1911	21.382
4	12	600	600	525	450	302.8423	17.038

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
3	9	600	600	525	450	170.3488	12.332
2	6	600	600	525	450	75.7106	7.49
1	3	600	600	525	450	18.9276	2.882
0	0	600	600	525	450	0	0
8	24	600	600	525	425	1042.1758	30.053
7	21	600	600	525	425	906.8478	28.22
6	18	600	600	525	425	666.2556	25.32
5	15	600	600	525	425	462.6775	21.545
4	12	600	600	525	425	296.1136	17.16
3	9	600	600	525	425	166.5639	12.408
2	6	600	600	525	425	74.0284	7.519
1	3	600	600	525	425	18.5071	2.878
0	0	600	600	525	425	0	0
8	24	600	600	500	500	1071.6534	30.271
7	21	600	600	500	500	928.5051	28.422
6	18	600	600	500	500	682.167	25.499
5	15	600	600	500	500	473.7271	21.698
4	12	600	600	500	500	303.1853	17.286
3	9	600	600	500	500	170.5418	12.506
2	6	600	600	500	500	75.7963	7.588
1	3	600	600	500	500	18.9491	2.913
0	0	600	600	500	500	0	0
8	24	600	600	500	475	1048.0075	30.466
7	21	600	600	500	475	909.7987	28.606
6	18	600	600	500	475	668.4235	25.665
5	15	600	600	500	475	464.183	21.837
4	12	600	600	500	475	297.0771	17.389
3	9	600	600	500	475	167.1059	12.569
2	6	600	600	500	475	74.2693	7.611
1	3	600	600	500	475	18.5673	2.908
0	0	600	600	500	475	0	0
8	24	600	600	500	450	1023.7609	30.69
7	21	600	600	500	450	890.5489	28.816
6	18	600	600	500	450	654.2808	25.854
5	15	600	600	500	450	454.3617	21.994
4	12	600	600	500	450	290.7915	17.508
3	9	600	600	500	450	163.5702	12.642
2	6	600	600	500	450	72.6979	7.639
1	3	600	600	500	450	18.1745	2.904
0	0	600	600	500	450	0	0
8	24	600	600	500	425	998.8376	30.947
7	21	600	600	500	425	870.6854	29.057
6	18	600	600	500	425	639.6872	26.07

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
5	15	600	600	500	425	444.2273	22.175
4	12	600	600	500	425	284.3054	17.643
3	9	600	600	500	425	159.9218	12.727
2	6	600	600	500	425	71.0764	7.672
1	3	600	600	500	425	17.7691	2.9
0	0	600	600	500	425	0	0
8	24	600	600	500	400	973.1574	31.244
7	21	600	600	500	400	850.1329	29.334
6	18	600	600	500	400	624.5875	26.318
5	15	600	600	500	400	433.7413	22.382
4	12	600	600	500	400	277.5944	17.799
3	9	600	600	500	400	156.1469	12.824
2	6	600	600	500	400	69.3986	7.711
1	3	600	600	500	400	17.3497	2.898
0	0	600	600	500	400	0	0
8	24	600	600	475	475	1002.1154	31.403
7	21	600	600	475	475	871.6305	29.483
6	18	600	600	475	475	640.3816	26.451
5	15	600	600	475	475	444.7094	22.496
4	12	600	600	475	475	284.614	17.895
3	9	600	600	475	475	160.0954	12.902
2	6	600	600	475	475	71.1535	7.77
1	3	600	600	475	475	17.7884	2.931
0	0	600	600	475	475	0	0
8	24	600	600	475	450	978.8924	31.657
7	21	600	600	475	450	853.1183	29.719
6	18	600	600	475	450	626.7808	26.662
5	15	600	600	475	450	435.2644	22.673
4	12	600	600	475	450	278.5692	18.027
3	9	600	600	475	450	156.6952	12.984
2	6	600	600	475	450	69.6423	7.802
1	3	600	600	475	450	17.4106	2.928
0	0	600	600	475	450	0	0
8	24	600	600	475	425	955.0633	31.944
7	21	600	600	475	425	834.0523	29.987
6	18	600	600	475	425	612.7731	26.902
5	15	600	600	475	425	425.5369	22.872
4	12	600	600	475	425	272.3436	18.176
3	9	600	600	475	425	153.1933	13.076
2	6	600	600	475	425	68.0859	7.838
1	3	600	600	475	425	17.0215	2.925
0	0	600	600	475	425	0	0
8	24	600	600	475	400	930.5453	32.272

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
7	21	600	600	475	400	814.3554	30.292
6	18	600	600	475	400	598.3019	27.174
5	15	600	600	475	400	415.4874	23.098
4	12	600	600	475	400	265.912	18.345
3	9	600	600	475	400	149.5755	13.182
2	6	600	600	475	400	66.478	7.881
1	3	600	600	475	400	16.6195	2.925
0	0	600	600	475	400	0	0
8	24	600	600	475	375	905.2539	32.648
7	21	600	600	475	375	793.9477	30.641
6	18	600	600	475	375	583.3085	27.485
5	15	600	600	475	375	405.0754	23.357
4	12	600	600	475	375	259.2482	18.539
3	9	600	600	475	375	145.8271	13.303
2	6	600	600	475	375	64.8121	7.931
1	3	600	600	475	375	16.203	2.925
0	0	600	600	475	375	0	0
8	24	600	600	450	450	933.7486	32.734
7	21	600	600	450	450	815.3494	30.722
6	18	600	600	450	450	599.0322	27.558
5	15	600	600	450	450	415.9946	23.422
4	12	600	600	450	450	266.2365	18.598
3	9	600	600	450	450	149.7581	13.357
2	6	600	600	450	450	66.5591	7.979
1	3	600	600	450	450	16.6398	2.955
0	0	600	600	450	450	0	0
8	24	600	600	450	425	911.0539	33.054
7	21	600	600	450	425	797.1182	31.018
6	18	600	600	450	425	585.6379	27.821
5	15	600	600	450	425	406.693	23.641
4	12	600	600	450	425	260.2835	18.761
3	9	600	600	450	425	146.4095	13.458
2	6	600	600	450	425	65.0709	8.019
1	3	600	600	450	425	16.2677	2.954
0	0	600	600	450	425	0	0
8	24	600	600	450	400	887.7566	33.415
7	21	600	600	450	400	778.3307	31.352
6	18	600	600	450	400	571.8348	28.118
5	15	600	600	450	400	397.1075	23.887
4	12	600	600	450	400	254.1488	18.945
3	9	600	600	450	400	142.9587	13.573
2	6	600	600	450	400	63.5372	8.066
1	3	600	600	450	400	15.8843	2.954

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
0	0	600	600	450	400	0	0
8	24	600	600	450	375	863.7669	33.825
7	21	600	600	450	375	758.903	31.731
6	18	600	600	450	375	557.5614	28.454
5	15	600	600	450	375	387.1954	24.165
4	12	600	600	450	375	247.8051	19.152
3	9	600	600	450	375	139.3904	13.702
2	6	600	600	450	375	61.9513	8.12
1	3	600	600	450	375	15.4878	2.956
0	0	600	600	450	375	0	0
8	24	600	600	450	350	838.9976	34.295
7	21	600	600	450	350	738.7528	32.163
6	18	600	600	450	350	542.7572	28.837
5	15	600	600	450	350	376.9147	24.482
4	12	600	600	450	350	241.2254	19.389
3	9	600	600	450	350	135.6893	13.849
2	6	600	600	450	350	60.3064	8.182
1	3	600	600	450	350	15.0766	2.959
0	0	600	600	450	350	0	0
8	24	600	600	425	425	867.0568	34.286
7	21	600	600	425	425	760.0945	32.158
6	18	600	600	425	425	558.4367	28.835
5	15	600	600	425	425	387.8033	24.485
4	12	600	600	425	425	248.1941	19.401
3	9	600	600	425	425	139.6092	13.874
2	6	600	600	425	425	62.0485	8.215
1	3	600	600	425	425	15.5121	2.985
0	0	600	600	425	425	0	0
8	24	600	600	425	400	845.0106	34.682
7	21	600	600	425	400	742.2468	32.523
6	18	600	600	425	400	545.3241	29.157
5	15	600	600	425	400	378.6973	24.752
4	12	600	600	425	400	242.3663	19.599
3	9	600	600	425	400	136.331	13.997
2	6	600	600	425	400	60.5916	8.265
1	3	600	600	425	400	15.1479	2.987
0	0	600	600	425	400	0	0
8	24	600	600	425	375	822.3758	35.128
7	21	600	600	425	375	723.8499	32.932
6	18	600	600	425	375	531.8081	29.519
5	15	600	600	425	375	369.3112	25.05
4	12	600	600	425	375	236.3592	19.821
3	9	600	600	425	375	132.952	14.134

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
2	6	600	600	425	375	59.0898	8.322
1	3	600	600	425	375	14.7724	2.989
0	0	600	600	425	375	0	0
8	24	600	600	425	350	799.0559	35.633
7	21	600	600	425	350	704.8141	33.395
6	18	600	600	425	350	517.8226	29.928
5	15	600	600	425	350	359.599	25.387
4	12	600	600	425	350	230.1434	20.071
3	9	600	600	425	350	129.4556	14.289
2	6	600	600	425	350	57.5358	8.387
1	3	600	600	425	350	14.384	2.994
0	0	600	600	425	350	0	0
8	24	600	600	400	400	802.5733	36.082
7	21	600	600	400	400	706.3334	33.811
6	18	600	600	400	400	518.9388	30.297
5	15	600	600	400	400	360.3742	25.696
4	12	600	600	400	400	230.6395	20.311
3	9	600	600	400	400	129.7347	14.454
2	6	600	600	400	400	57.6599	8.478
1	3	600	600	400	400	14.415	3.022
0	0	600	600	400	400	0	0
8	24	600	600	400	375	781.31	36.566
7	21	600	600	400	375	688.9873	34.252
6	18	600	600	400	375	506.1947	30.685
5	15	600	600	400	375	351.5241	26.015
4	12	600	600	400	375	224.9754	20.547
3	9	600	600	400	375	126.5487	14.6
2	6	600	600	400	375	56.2439	8.538
1	3	600	600	400	375	14.061	3.026
0	0	600	600	400	375	0	0
8	24	600	600	400	350	759.4837	37.107
7	21	600	600	400	350	671.1106	34.746
6	18	600	600	400	350	493.0609	31.118
5	15	600	600	400	350	342.4034	26.371
4	12	600	600	400	350	219.1382	20.809
3	9	600	600	400	350	123.2652	14.762
2	6	600	600	400	350	54.7845	8.606
1	3	600	600	400	350	13.6961	3.032
0	0	600	600	400	350	0	0
8	24	600	600	375	375	740.8447	38.146
7	21	600	600	375	375	654.5556	35.696
6	18	600	600	375	375	480.898	31.954
5	15	600	600	375	375	333.957	27.061

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
4	12	600	600	375	375	213.7325	21.329
3	9	600	600	375	375	120.2245	15.098
2	6	600	600	375	375	53.4331	8.768
1	3	600	600	375	375	13.3583	3.065
0	0	600	600	375	375	0	0
8	24	600	600	375	350	720.5109	38.726
7	21	600	600	375	350	637.8439	36.221
6	18	600	600	375	350	468.62	32.413
5	15	600	600	375	350	325.4306	27.436
4	12	600	600	375	350	208.2756	21.605
3	9	600	600	375	350	117.155	15.266
2	6	600	600	375	350	52.0689	8.838
1	3	600	600	375	350	13.0172	3.072
0	0	600	600	375	350	0	0
8	24	600	600	350	350	682.4131	40.494
7	21	600	600	350	350	605.2576	37.824
6	18	600	600	350	350	444.6791	33.812
5	15	600	600	350	350	308.8049	28.582
4	12	600	600	350	350	197.6351	22.455
3	9	600	600	350	350	111.1698	15.802
2	6	600	600	350	350	49.4088	9.081
1	3	600	600	350	350	12.3522	3.114
0	0	600	600	350	350	0	0
8	24	600	575	600	600	1336.7506	27.518
7	21	600	575	600	600	1136.505	25.803
6	18	600	575	600	600	834.9832	23.123
5	15	600	575	600	600	579.8495	19.691
4	12	600	575	600	600	371.1037	15.752
3	9	600	575	600	600	208.7458	11.516
2	6	600	575	600	600	92.7759	7.167
1	3	600	575	600	600	23.194	2.941
0	0	600	575	600	600	0	0
8	24	600	575	600	575	1312.6608	27.546
7	21	600	575	600	575	1117.9992	25.833
6	18	600	575	600	575	821.3871	23.152
5	15	600	575	600	575	570.4077	19.716
4	12	600	575	600	575	365.0609	15.769
3	9	600	575	600	575	205.3468	11.523
2	6	600	575	600	575	91.2652	7.162
1	3	600	575	600	575	22.8163	2.928
0	0	600	575	600	575	0	0
8	24	600	575	600	550	1288.0454	27.586
7	21	600	575	600	550	1099.0427	25.874

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
6	18	600	575	600	550	807.4599	23.192
5	15	600	575	600	550	560.7361	19.75
4	12	600	575	600	550	358.8711	15.793
3	9	600	575	600	550	201.865	11.534
2	6	600	575	600	550	89.7178	7.159
1	3	600	575	600	550	22.4294	2.916
0	0	600	575	600	550	0	0
8	24	600	575	600	525	1262.8555	27.641
7	21	600	575	600	525	1079.591	25.929
6	18	600	575	600	525	793.1689	23.244
5	15	600	575	600	525	550.8118	19.794
4	12	600	575	600	525	352.5195	15.825
3	9	600	575	600	525	198.2922	11.551
2	6	600	575	600	525	88.1299	7.158
1	3	600	575	600	525	22.0325	2.904
0	0	600	575	600	525	0	0
8	24	600	575	600	500	1237.0358	27.712
7	21	600	575	600	500	1059.5937	26
6	18	600	575	600	500	778.477	23.31
5	15	600	575	600	500	540.609	19.85
4	12	600	575	600	500	345.9898	15.866
3	9	600	575	600	500	194.6192	11.574
2	6	600	575	600	500	86.4974	7.161
1	3	600	575	600	500	21.6244	2.892
0	0	600	575	600	500	0	0
8	24	600	575	575	575	1268.1632	28.044
7	21	600	575	575	575	1081.9941	26.308
6	18	600	575	575	575	794.9345	23.583
5	15	600	575	575	575	552.0378	20.082
4	12	600	575	575	575	353.3042	16.053
3	9	600	575	575	575	198.7336	11.714
2	6	600	575	575	575	88.3261	7.253
1	3	600	575	575	575	22.0815	2.935
0	0	600	575	575	575	0	0
8	24	600	575	575	550	1244.1857	28.103
7	21	600	575	575	550	1063.4601	26.366
6	18	600	575	575	550	781.3177	23.638
5	15	600	575	575	550	542.5817	20.129
4	12	600	575	575	550	347.2523	16.087
3	9	600	575	575	550	195.3294	11.732
2	6	600	575	575	550	86.8131	7.254
1	3	600	575	575	550	21.7033	2.924
0	0	600	575	575	550	0	0

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
8	24	600	575	575	525	1219.6613	28.177
7	21	600	575	575	525	1044.4514	26.44
6	18	600	575	575	525	767.352	23.707
5	15	600	575	575	525	532.8834	20.186
4	12	600	575	575	525	341.0453	16.129
3	9	600	575	575	525	191.838	11.755
2	6	600	575	575	525	85.2613	7.257
1	3	600	575	575	525	21.3153	2.913
0	0	600	575	575	525	0	0
8	24	600	575	575	500	1194.5349	28.269
7	21	600	575	575	500	1024.9177	26.53
6	18	600	575	575	500	753.0007	23.79
5	15	600	575	575	500	522.9172	20.256
4	12	600	575	575	500	334.667	16.181
3	9	600	575	575	500	188.2502	11.785
2	6	600	575	575	500	83.6667	7.263
1	3	600	575	575	500	20.9167	2.902
0	0	600	575	575	500	0	0
8	24	600	575	575	475	1168.7449	28.382
7	21	600	575	575	475	1004.8024	26.639
6	18	600	575	575	475	738.2222	23.89
5	15	600	575	575	475	512.6543	20.341
4	12	600	575	575	475	328.0988	16.244
3	9	600	575	575	475	184.5555	11.822
2	6	600	575	575	475	82.0247	7.273
1	3	600	575	575	475	20.5062	2.892
0	0	600	575	575	475	0	0
8	24	600	575	550	550	1199.156	28.688
7	21	600	575	550	550	1026.8068	26.923
6	18	600	575	550	550	754.3887	24.142
5	15	600	575	550	550	523.881	20.555
4	12	600	575	550	550	335.2839	16.417
3	9	600	575	550	550	188.5972	11.952
2	6	600	575	550	550	83.821	7.36
1	3	600	575	550	550	20.9552	2.934
0	0	600	575	550	550	0	0
8	24	600	575	550	525	1175.3421	28.784
7	21	600	575	550	525	1008.2776	27.015
6	18	600	575	550	525	740.7754	24.227
5	15	600	575	550	525	514.4274	20.627
4	12	600	575	550	525	329.2335	16.47
3	9	600	575	550	525	185.1939	11.983
2	6	600	575	550	525	82.3084	7.367

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
1	3	600	575	550	525	20.5771	2.924
0	0	600	575	550	525	0	0
8	24	600	575	550	500	1150.9611	28.898
7	21	600	575	550	500	989.2505	27.125
6	18	600	575	550	500	726.7963	24.328
5	15	600	575	550	500	504.7196	20.712
4	12	600	575	550	500	323.0206	16.534
3	9	600	575	550	500	181.6991	12.02
2	6	600	575	550	500	80.7551	7.377
1	3	600	575	550	500	20.1888	2.915
0	0	600	575	550	500	0	0
8	24	600	575	550	475	1125.9517	29.034
7	21	600	575	550	475	969.6691	27.256
6	18	600	575	550	475	712.4099	24.447
5	15	600	575	550	475	494.7291	20.812
4	12	600	575	550	475	316.6266	16.608
3	9	600	575	550	475	178.1025	12.066
2	6	600	575	550	475	79.1567	7.391
1	3	600	575	550	475	19.7892	2.906
0	0	600	575	550	475	0	0
8	24	600	575	550	450	1100.2457	29.196
7	21	600	575	550	450	949.4705	27.41
6	18	600	575	550	450	697.5702	24.587
5	15	600	575	550	450	484.4237	20.93
4	12	600	575	550	450	310.0312	16.697
3	9	600	575	550	450	174.3925	12.12
2	6	600	575	550	450	77.5078	7.409
1	3	600	575	550	450	19.3769	2.899
0	0	600	575	550	450	0	0
8	24	600	575	525	425	1130.0087	29.469
7	21	600	575	525	425	971.1562	27.662
6	18	600	575	525	425	713.5025	24.812
5	15	600	575	525	425	495.4879	21.121
4	12	600	575	525	425	317.1122	16.852
3	9	600	575	525	425	178.3756	12.237
2	6	600	575	525	425	79.2781	7.489
1	3	600	575	525	425	19.8195	2.938
0	0	600	575	525	425	0	0
8	24	600	575	525	500	1106.4209	29.606
7	21	600	575	525	500	952.6754	27.794
6	18	600	575	525	500	699.9248	24.931
5	15	600	575	525	500	486.0589	21.221
4	12	600	575	525	500	311.0777	16.927

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
3	9	600	575	525	500	174.9812	12.282
2	6	600	575	525	500	77.7694	7.503
1	3	600	575	525	500	19.4424	2.93
0	0	600	575	525	500	0	0
8	24	600	575	525	475	1082.2487	29.767
7	21	600	575	525	475	933.6755	27.947
6	18	600	575	525	475	685.9657	25.07
5	15	600	575	525	475	476.3651	21.338
4	12	600	575	525	475	304.8736	17.014
3	9	600	575	525	475	171.4914	12.335
2	6	600	575	525	475	76.2184	7.521
1	3	600	575	525	475	19.0546	2.923
0	0	600	575	525	475	0	0
8	24	600	575	525	450	1057.4239	29.955
7	21	600	575	525	450	914.0939	28.125
6	18	600	575	525	450	671.5792	25.231
5	15	600	575	525	450	466.3744	21.473
4	12	600	575	525	450	298.4796	17.115
3	9	600	575	525	450	167.8948	12.398
2	6	600	575	525	450	74.6199	7.544
1	3	600	575	525	450	18.655	2.916
0	0	600	575	525	450	0	0
8	24	600	575	525	425	1031.872	30.175
7	21	600	575	525	425	893.8616	28.332
6	18	600	575	525	425	656.7146	25.418
5	15	600	575	525	425	456.0518	21.629
4	12	600	575	525	425	291.8732	17.233
3	9	600	575	525	425	164.1787	12.471
2	6	600	575	525	425	72.9683	7.571
1	3	600	575	525	425	18.2421	2.911
0	0	600	575	525	425	0	0
8	24	600	575	500	500	1061.0616	30.403
7	21	600	575	500	500	915.3109	28.544
6	18	600	575	500	500	672.4733	25.606
5	15	600	575	500	500	466.9954	21.79
4	12	600	575	500	500	298.877	17.364
3	9	600	575	500	500	168.1183	12.573
2	6	600	575	500	500	74.7193	7.643
1	3	600	575	500	500	18.6798	2.948
0	0	600	575	500	500	0	0
8	24	600	575	500	475	1037.7749	30.59
7	21	600	575	500	475	896.934	28.72
6	18	600	575	500	475	658.9719	25.765

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
5	15	600	575	500	475	457.6194	21.923
4	12	600	575	500	475	292.8764	17.464
3	9	600	575	500	475	164.743	12.634
2	6	600	575	500	475	73.2191	7.665
1	3	600	575	500	475	18.3048	2.942
0	0	600	575	500	475	0	0
8	24	600	575	500	450	1013.891	30.806
7	21	600	575	500	450	878.0209	28.923
6	18	600	575	500	450	645.0766	25.948
5	15	600	575	500	450	447.9698	22.076
4	12	600	575	500	450	286.7007	17.579
3	9	600	575	500	450	161.2691	12.705
2	6	600	575	500	450	71.6752	7.691
1	3	600	575	500	450	17.9188	2.937
0	0	600	575	500	450	0	0
8	24	600	575	500	425	989.3346	31.054
7	21	600	575	500	425	858.5021	29.156
6	18	600	575	500	425	630.7363	26.157
5	15	600	575	500	425	438.0113	22.251
4	12	600	575	500	425	280.3272	17.71
3	9	600	575	500	425	157.6841	12.786
2	6	600	575	500	425	70.0818	7.723
1	3	600	575	500	425	17.5205	2.933
0	0	600	575	500	425	0	0
8	24	600	575	500	400	964.0257	31.341
7	21	600	575	500	400	838.3034	29.424
6	18	600	575	500	400	615.8964	26.398
5	15	600	575	500	400	427.7058	22.452
4	12	600	575	500	400	273.7317	17.861
3	9	600	575	500	400	153.9741	12.881
2	6	600	575	500	400	68.4329	7.76
1	3	600	575	500	400	17.1082	2.93
0	0	600	575	500	400	0	0
8	24	600	575	475	475	992.7133	31.512
7	21	600	575	475	475	859.5951	29.584
6	18	600	575	475	475	631.5393	26.54
5	15	600	575	475	475	438.5689	22.574
4	12	600	575	475	475	280.6841	17.963
3	9	600	575	475	475	157.8848	12.963
2	6	600	575	475	475	70.171	7.822
1	3	600	575	475	475	17.5428	2.964
0	0	600	575	475	475	0	0
8	24	600	575	475	450	969.8167	31.757

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
7	21	600	575	475	450	841.3915	29.813
6	18	600	575	475	450	618.1651	26.745
5	15	600	575	475	450	429.2814	22.745
4	12	600	575	475	450	274.7401	18.091
3	9	600	575	475	450	154.5413	13.042
2	6	600	575	475	450	68.685	7.853
1	3	600	575	475	450	17.1713	2.96
0	0	600	575	475	450	0	0
8	24	600	575	475	425	946.3167	32.035
7	21	600	575	475	425	822.6403	30.073
6	18	600	575	475	425	604.3888	26.978
5	15	600	575	475	425	419.7145	22.939
4	12	600	575	475	425	268.6173	18.237
3	9	600	575	475	425	151.0972	13.132
2	6	600	575	475	425	67.1543	7.888
1	3	600	575	475	425	16.7886	2.958
0	0	600	575	475	425	0	0
8	24	600	575	475	400	922.1309	32.354
7	21	600	575	475	400	803.2656	30.369
6	18	600	575	475	400	590.1543	27.243
5	15	600	575	475	400	409.8294	23.16
4	12	600	575	475	400	262.2908	18.402
3	9	600	575	475	400	147.5386	13.236
2	6	600	575	475	400	65.5727	7.93
1	3	600	575	475	400	16.3932	2.956
0	0	600	575	475	400	0	0
8	24	600	575	475	375	897.1748	32.721
7	21	600	575	475	375	783.1883	30.71
6	18	600	575	475	375	575.4037	27.547
5	15	600	575	475	375	399.5859	23.413
4	12	600	575	475	375	255.735	18.592
3	9	600	575	475	375	143.8509	13.354
2	6	600	575	475	375	63.9337	7.979
1	3	600	575	475	375	15.9834	2.956
0	0	600	575	475	375	0	0
8	24	600	575	450	450	925.4169	32.818
7	21	600	575	450	450	804.3863	30.802
6	18	600	575	450	450	590.9777	27.629
5	15	600	575	450	450	410.4012	23.485
4	12	600	575	450	450	262.6568	18.656
3	9	600	575	450	450	147.7444	13.413
2	6	600	575	450	450	65.6642	8.028
1	3	600	575	450	450	16.416	2.987

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
0	0	600	575	450	450	0	0
8	24	600	575	450	425	903.0146	33.129
7	21	600	575	450	425	786.4407	31.09
6	18	600	575	450	425	577.7932	27.886
5	15	600	575	450	425	401.2453	23.699
4	12	600	575	450	425	256.797	18.816
3	9	600	575	450	425	144.4483	13.512
2	6	600	575	450	425	64.1992	8.068
1	3	600	575	450	425	16.0498	2.985
0	0	600	575	450	425	0	0
8	24	600	575	450	400	880.0112	33.481
7	21	600	575	450	400	767.9442	31.416
6	18	600	575	450	400	564.2039	28.176
5	15	600	575	450	400	391.8083	23.94
4	12	600	575	450	400	250.7573	18.996
3	9	600	575	450	400	141.051	13.623
2	6	600	575	450	400	62.6893	8.113
1	3	600	575	450	400	15.6723	2.985
0	0	600	575	450	400	0	0
8	24	600	575	450	375	856.3175	33.882
7	21	600	575	450	375	748.8142	31.787
6	18	600	575	450	375	550.1492	28.506
5	15	600	575	450	375	382.0481	24.213
4	12	600	575	450	375	244.5108	19.2
3	9	600	575	450	375	137.5373	13.751
2	6	600	575	450	375	61.1277	8.166
1	3	600	575	450	375	15.2819	2.986
0	0	600	575	450	375	0	0
8	24	600	575	450	350	831.8464	34.342
7	21	600	575	450	350	728.969	32.211
6	18	600	575	450	350	535.569	28.882
5	15	600	575	450	350	371.9229	24.525
4	12	600	575	450	350	238.0307	19.432
3	9	600	575	450	350	133.8923	13.896
2	6	600	575	450	350	59.5077	8.227
1	3	600	575	450	350	14.8769	2.989
0	0	600	575	450	350	0	0
8	24	600	575	425	425	859.6713	34.345
7	21	600	575	425	425	750.1098	32.217
6	18	600	575	425	425	551.1011	28.888
5	15	600	575	425	425	382.7091	24.535
4	12	600	575	425	425	244.9338	19.451
3	9	600	575	425	425	137.7753	13.924

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
2	6	600	575	425	425	61.2335	8.262
1	3	600	575	425	425	15.3084	3.016
0	0	600	575	425	425	0	0
8	24	600	575	425	400	837.883	34.732
7	21	600	575	425	400	732.5234	32.574
6	18	600	575	425	400	538.1804	29.205
5	15	600	575	425	400	373.7364	24.797
4	12	600	575	425	400	239.1913	19.645
3	9	600	575	425	400	134.5451	14.045
2	6	600	575	425	400	59.7978	8.312
1	3	600	575	425	400	14.9495	3.017
0	0	600	575	425	400	0	0
8	24	600	575	425	375	815.5066	35.169
7	21	600	575	425	375	714.3925	32.975
6	18	600	575	425	375	524.8598	29.56
5	15	600	575	425	375	364.486	25.09
4	12	600	575	425	375	233.271	19.864
3	9	600	575	425	375	131.2149	14.18
2	6	600	575	425	375	58.3178	8.368
1	3	600	575	425	375	14.5794	3.02
0	0	600	575	425	375	0	0
8	24	600	575	425	350	792.4462	35.664
7	21	600	575	425	350	695.6283	33.43
6	18	600	575	425	350	511.0739	29.962
5	15	600	575	425	350	354.9124	25.422
4	12	600	575	425	350	227.1439	20.11
3	9	600	575	425	350	127.7685	14.333
2	6	600	575	425	350	56.786	8.432
1	3	600	575	425	350	14.1965	3.024
0	0	600	575	425	350	0	0
8	24	600	575	400	400	796.0092	36.116
7	21	600	575	400	400	697.2291	33.849
6	18	600	575	400	400	512.25	30.333
5	15	600	575	400	400	355.7292	25.734
4	12	600	575	400	400	227.6667	20.352
3	9	600	575	400	400	128.0625	14.5
2	6	600	575	400	400	56.9167	8.524
1	3	600	575	400	400	14.2292	3.052
0	0	600	575	400	400	0	0
8	24	600	575	400	375	774.9696	36.59
7	21	600	575	400	375	680.1193	34.282
6	18	600	575	400	375	499.6795	30.715
5	15	600	575	400	375	346.9996	26.048

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
4	12	600	575	400	375	222.0798	20.585
3	9	600	575	400	375	124.9199	14.644
2	6	600	575	400	375	55.5199	8.584
1	3	600	575	400	375	13.88	3.056
0	0	600	575	400	375	0	0
8	24	600	575	400	350	753.3667	37.122
7	21	600	575	400	350	662.4827	34.768
6	18	600	575	400	350	486.722	31.142
5	15	600	575	400	350	338.0014	26.399
4	12	600	575	400	350	216.3209	20.844
3	9	600	575	400	350	121.6805	14.804
2	6	600	575	400	350	54.0802	8.651
1	3	600	575	400	350	13.5201	3.061
0	0	600	575	400	350	0	0
8	24	600	575	375	375	734.9806	38.153
7	21	600	575	375	375	646.2328	35.712
6	18	600	575	375	375	474.7833	31.974
5	15	600	575	375	375	329.7106	27.087
4	12	600	575	375	375	211.0148	21.364
3	9	600	575	375	375	118.6958	15.141
2	6	600	575	375	375	52.7537	8.813
1	3	600	575	375	375	13.1884	3.095
0	0	600	575	375	375	0	0
8	24	600	575	375	350	714.8377	38.724
7	21	600	575	375	350	629.7322	36.23
6	18	600	575	375	350	462.6604	32.427
5	15	600	575	375	350	321.292	27.458
4	12	600	575	375	350	205.6269	21.636
3	9	600	575	375	350	115.6651	15.308
2	6	600	575	375	350	51.4067	8.883
1	3	600	575	375	350	12.8517	3.101
0	0	600	575	375	350	0	0
8	24	600	575	350	350	677.135	40.475
7	21	600	575	350	350	597.6194	37.82
6	18	600	575	350	350	439.0673	33.817
5	15	600	575	350	350	304.9078	28.598
4	12	600	575	350	350	195.141	22.483
3	9	600	575	350	350	109.7668	15.843
2	6	600	575	350	350	48.7853	9.127
1	3	600	575	350	350	12.1963	3.144
0	0	600	575	350	350	0	0
8	24	600	550	600	600	1319.6832	27.757
7	21	600	550	600	600	1117.4914	26.022

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
6	18	600	550	600	600	821.0141	23.315
5	15	600	550	600	600	570.1487	19.853
4	12	600	550	600	600	364.8952	15.884
3	9	600	550	600	600	205.2535	11.619
2	6	600	550	600	600	91.2238	7.241
1	3	600	550	600	600	22.8059	2.985
0	0	600	550	600	600	0	0
8	24	600	550	600	550	1271.9507	27.809
7	21	600	550	600	550	1080.8393	26.078
6	18	600	550	600	550	794.0861	23.371
5	15	600	550	600	550	551.4486	19.901
4	12	600	550	600	550	352.9271	15.917
3	9	600	550	600	550	198.5215	11.632
2	6	600	550	600	550	88.2318	7.23
1	3	600	550	600	550	22.0579	2.958
0	0	600	550	600	550	0	0
8	24	600	550	600	500	1221.9475	27.919
7	21	600	550	600	500	1042.2425	26.189
6	18	600	550	600	500	765.7292	23.476
5	15	600	550	600	500	531.7564	19.991
4	12	600	550	600	500	340.3241	15.982
3	9	600	550	600	500	191.4323	11.666
2	6	600	550	600	500	85.081	7.229
1	3	600	550	600	500	21.2703	2.932
0	0	600	550	600	500	0	0
8	24	600	550	600	450	1169.206	28.106
7	21	600	550	600	450	1001.276	26.373
6	18	600	550	600	450	735.6313	23.646
5	15	600	550	600	450	510.8551	20.135
4	12	600	550	600	450	326.9473	16.089
3	9	600	550	600	450	183.9078	11.727
2	6	600	550	600	450	81.7368	7.242
1	3	600	550	600	450	20.4342	2.909
0	0	600	550	600	450	0	0
8	24	600	550	550	550	1185.2459	28.884
7	21	600	550	550	550	1010.6129	27.102
6	18	600	550	550	550	742.4911	24.299
5	15	600	550	550	550	515.6188	20.689
4	12	600	550	550	550	329.996	16.528
3	9	600	550	550	550	185.6228	12.041
2	6	600	550	550	550	82.499	7.427
1	3	600	550	550	550	20.6248	2.974
0	0	600	550	550	500	0	0

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
8	24	600	550	550	500	1137.9326	29.078
7	21	600	550	550	500	973.8212	27.289
6	18	600	550	550	500	715.4605	24.472
5	15	600	550	550	500	496.8476	20.834
4	12	600	550	550	500	317.9824	16.636
3	9	600	550	550	500	178.8651	12.103
2	6	600	550	550	500	79.4956	7.441
1	3	600	550	550	500	19.8739	2.953
0	0	600	550	550	500	0	0
8	24	600	550	550	450	1088.1256	29.358
7	21	600	550	550	450	934.845	27.558
6	18	600	550	550	450	686.8249	24.717
5	15	600	550	550	450	476.9617	21.041
4	12	600	550	550	450	305.2555	16.79
3	9	600	550	550	450	171.7062	12.197
2	6	600	550	550	450	76.3139	7.47
1	3	600	550	550	450	19.0785	2.936
0	0	600	550	550	450	0	0
8	24	600	550	550	400	1035.2546	29.758
7	21	600	550	550	400	893.1603	27.938
6	18	600	550	550	400	656.1994	25.062
5	15	600	550	550	400	455.694	21.331
4	12	600	550	550	400	291.6442	17.008
3	9	600	550	550	400	164.0498	12.331
2	6	600	550	550	400	72.911	7.519
1	3	600	550	550	400	18.2278	2.922
0	0	600	550	550	400	0	0
8	24	600	550	500	500	1049.9776	30.552
7	21	600	550	500	500	901.7401	28.681
6	18	600	550	500	500	662.5029	25.726
5	15	600	550	500	500	460.0715	21.893
4	12	600	550	500	500	294.4457	17.453
3	9	600	550	500	500	165.6257	12.647
2	6	600	550	500	500	73.6114	7.703
1	3	600	550	500	500	18.4029	2.985
0	0	600	550	500	500	0	0
8	24	600	550	500	450	1003.5693	30.937
7	21	600	550	500	450	865.1444	29.045
6	18	600	550	500	450	635.6163	26.055
5	15	600	550	500	450	441.4002	22.168
4	12	600	550	500	450	282.4961	17.659
3	9	600	550	500	450	158.9041	12.773
2	6	600	550	500	450	70.624	7.748

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
1	3	600	550	500	450	17.656	2.973
0	0	600	550	500	450	0	0
8	24	600	550	500	400	954.4845	31.454
7	21	600	550	500	400	826.1551	29.529
6	18	600	550	500	400	606.9711	26.491
5	15	600	550	500	400	421.5077	22.533
4	12	600	550	500	400	269.7649	17.932
3	9	600	550	500	400	151.7428	12.944
2	6	600	550	500	400	67.4412	7.814
1	3	600	550	500	400	16.8603	2.965
0	0	600	550	500	400	0	0
8	24	600	550	500	350	902.0704	32.153
7	21	600	550	500	350	784.1662	30.183
6	18	600	550	500	350	576.1221	27.076
5	15	600	550	500	350	400.0848	23.022
4	12	600	550	500	350	256.0543	18.3
3	9	600	550	500	350	144.0305	13.175
2	6	600	550	500	350	64.0136	7.909
1	3	600	550	500	350	16.0034	2.962
0	0	600	550	500	350	0	0
8	24	600	550	450	450	916.7149	32.918
7	21	600	550	450	450	793.1339	30.895
6	18	600	550	450	450	582.7106	27.712
5	15	600	550	450	450	404.6602	23.559
4	12	600	550	450	450	258.9825	18.723
3	9	600	550	450	450	145.6777	13.474
2	6	600	550	450	450	64.7456	8.083
1	3	600	550	450	450	16.1864	3.021
0	0	600	550	450	450	0	0
8	24	600	550	450	400	871.9322	33.562
7	21	600	550	450	400	757.2947	31.494
6	18	600	550	450	400	556.3797	28.246
5	15	600	550	450	400	386.3748	24.003
4	12	600	550	450	400	247.2799	19.055
3	9	600	550	450	400	139.0949	13.68
2	6	600	550	450	400	61.82	8.165
1	3	600	550	450	400	15.455	3.019
0	0	600	550	450	400	0	0
8	24	600	550	450	350	824.3991	34.402
7	21	600	550	450	350	718.9493	32.271
6	18	600	550	450	350	528.2076	28.936
5	15	600	550	450	350	366.8109	24.576
4	12	600	550	450	350	234.7589	19.483

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
3	9	600	550	450	350	132.0519	13.948
2	6	600	550	450	350	58.6897	8.277
1	3	600	550	450	350	14.6724	3.022
0	0	600	550	450	350	0	0
8	24	600	550	400	400	789.1812	36.162
7	21	600	550	400	400	687.9141	33.898
6	18	600	550	400	400	505.4063	30.38
5	15	600	550	400	400	350.9766	25.78
4	12	600	550	400	400	224.625	20.4
3	9	600	550	400	400	126.3516	14.552
2	6	600	550	400	400	56.1563	8.575
1	3	600	550	400	400	14.0391	3.085
0	0	600	550	400	400	0	0
8	24	600	550	400	350	747.016	37.149
7	21	600	550	400	350	653.6662	34.801
6	18	600	550	400	350	480.2446	31.176
5	15	600	550	400	350	333.5032	26.435
4	12	600	550	400	350	213.442	20.886
3	9	600	550	400	350	120.0611	14.852
2	6	600	550	400	350	53.3605	8.7
1	3	600	550	400	350	13.3401	3.093
0	0	600	550	400	350	0	0
8	24	600	550	350	350	671.6762	40.466
7	21	600	550	350	350	589.8337	37.826
6	18	600	550	350	350	433.3472	33.831
5	15	600	550	350	350	300.9356	28.621
4	12	600	550	350	350	192.5988	22.518
3	9	600	550	350	350	108.3368	15.89
2	6	600	550	350	350	48.1497	9.176
1	3	600	550	350	350	12.0374	3.175
0	0	600	550	350	350	0	0
8	24	600	500	600	600	1283.0506	28.31
7	21	600	500	600	600	1077.629	26.527
6	18	600	500	600	600	791.7274	23.758
5	15	600	500	600	600	549.8107	20.229
4	12	600	500	600	600	351.8788	16.19
3	9	600	500	600	600	197.9318	11.857
2	6	600	500	600	600	87.9697	7.411
1	3	600	500	600	600	21.9924	3.082
0	0	600	500	600	600	0	0
8	24	600	500	600	550	1237.3939	28.329
7	21	600	500	600	550	1042.6843	26.553
6	18	600	500	600	550	766.0538	23.787

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
5	15	600	500	600	550	531.9818	20.254
4	12	600	500	600	550	340.4683	16.206
3	9	600	500	600	550	191.5134	11.857
2	6	600	500	600	550	85.1171	7.393
1	3	600	500	600	550	21.2793	3.052
0	0	600	500	600	550	0	0
8	24	600	500	600	500	1189.5428	28.403
7	21	600	500	600	500	1005.8849	26.631
6	18	600	500	600	500	739.0175	23.863
5	15	600	500	600	500	513.2066	20.319
4	12	600	500	600	500	328.4522	16.251
3	9	600	500	600	500	184.7544	11.877
2	6	600	500	600	500	82.1131	7.384
1	3	600	500	600	500	20.5283	3.023
0	0	600	500	600	500	0	0
8	24	600	500	600	450	1139.0421	28.551
7	21	600	500	600	450	966.8235	26.779
6	18	600	500	600	450	710.3193	24.002
5	15	600	500	600	450	493.2773	20.437
4	12	600	500	600	450	315.6975	16.338
3	9	600	500	600	450	177.5798	11.925
2	6	600	500	600	450	78.9244	7.39
1	3	600	500	600	450	19.7311	2.997
0	0	600	500	600	450	0	0
8	24	600	500	550	550	1155.3247	29.344
7	21	600	500	550	550	976.6548	27.522
6	18	600	500	550	550	717.5423	24.668
5	15	600	500	550	550	498.2933	21.002
4	12	600	500	550	550	318.9077	16.786
3	9	600	500	550	550	179.3856	12.246
2	6	600	500	550	550	79.7269	7.58
1	3	600	500	550	550	19.9317	3.064
0	0	600	500	550	500	0	0
8	24	600	500	550	500	1109.9103	29.502
7	21	600	500	550	500	941.4852	27.678
6	18	600	500	550	500	691.7034	24.812
5	15	600	500	550	500	480.3496	21.124
4	12	600	500	550	500	307.4237	16.876
3	9	600	500	550	500	172.9259	12.296
2	6	600	500	550	500	76.8559	7.587
1	3	600	500	550	500	19.214	3.041
0	0	600	500	550	500	0	0
8	24	600	500	550	450	1062.0646	29.745

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
7	21	600	500	550	450	904.2155	27.912
6	18	600	500	550	450	664.3216	25.027
5	15	600	500	550	450	461.3345	21.305
4	12	600	500	550	450	295.2541	17.011
3	9	600	500	550	450	166.0804	12.376
2	6	600	500	550	450	73.8135	7.609
1	3	600	500	550	450	18.4534	3.02
0	0	600	500	550	450	0	0
8	24	600	500	550	400	1011.2275	30.103
7	21	600	500	550	400	864.3389	28.254
6	18	600	500	550	400	635.0245	25.339
5	15	600	500	550	400	440.9892	21.568
4	12	600	500	550	400	282.2331	17.208
3	9	600	500	550	400	158.7561	12.497
2	6	600	500	550	400	70.5583	7.65
1	3	600	500	550	400	17.6396	3.003
0	0	600	500	550	400	0	0
8	24	600	500	500	500	1026.1263	30.913
7	21	600	500	500	500	873.3173	29.012
6	18	600	500	500	500	641.6209	26.017
5	15	600	500	500	500	445.5701	22.142
4	12	600	500	500	500	285.1648	17.663
3	9	600	500	500	500	160.4052	12.821
2	6	600	500	500	500	71.2912	7.84
1	3	600	500	500	500	17.8228	3.069
0	0	600	500	500	500	0	0
8	24	600	500	500	450	981.3766	31.26
7	21	600	500	500	450	838.2041	29.342
6	18	600	500	500	450	615.8234	26.316
5	15	600	500	500	450	427.6552	22.393
4	12	600	500	500	450	273.6993	17.85
3	9	600	500	500	450	153.9559	12.935
2	6	600	500	500	450	68.4248	7.879
1	3	600	500	500	450	17.1062	3.054
0	0	600	500	500	450	0	0
8	24	600	500	500	400	933.994	31.736
7	21	600	500	500	400	800.7709	29.79
6	18	600	500	500	400	588.3215	26.72
5	15	600	500	500	400	408.5566	22.732
4	12	600	500	500	400	261.4762	18.105
3	9	600	500	500	400	147.0804	13.093
2	6	600	500	500	400	65.3691	7.939
1	3	600	500	500	400	16.3423	3.043

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
0	0	600	500	500	400	0	0
8	24	600	500	500	350	883.3316	32.39
7	21	600	500	500	350	760.426	30.403
6	18	600	500	500	350	558.6803	27.271
5	15	600	500	500	350	387.9725	23.193
4	12	600	500	500	350	248.3024	18.452
3	9	600	500	500	350	139.6701	13.312
2	6	600	500	500	350	62.0756	8.027
1	3	600	500	500	350	15.5189	3.037
0	0	600	500	500	350	0	0
8	24	600	500	450	450	898.0342	33.171
7	21	600	500	450	450	769.6387	31.132
6	18	600	500	450	450	565.4488	27.922
5	15	600	500	450	450	392.6728	23.743
4	12	600	500	450	450	251.3106	18.886
3	9	600	500	450	450	141.3622	13.62
2	6	600	500	450	450	62.8276	8.207
1	3	600	500	450	450	15.7069	3.1
0	0	600	500	450	450	0	0
8	24	600	500	450	400	854.6205	33.775
7	21	600	500	450	400	735.0935	31.696
6	18	600	500	450	400	540.0687	28.426
5	15	600	500	450	400	375.0477	24.163
4	12	600	500	450	400	240.0305	19.201
3	9	600	500	450	400	135.0172	13.815
2	6	600	500	450	400	60.0076	8.284
1	3	600	500	450	400	15.0019	3.094
0	0	600	500	450	400	0	0
8	24	600	500	450	350	808.4786	34.571
7	21	600	500	450	350	698.1004	32.434
6	18	600	500	450	350	512.8901	29.085
5	15	600	500	450	350	356.1737	24.711
4	12	600	500	450	350	227.9511	19.611
3	9	600	500	450	350	128.2225	14.072
2	6	600	500	450	350	56.9878	8.39
1	3	600	500	450	350	14.2469	3.095
0	0	600	500	450	350	0	0
8	24	600	500	400	400	774.6089	36.302
7	21	600	500	400	400	668.5588	34.038
6	18	600	500	400	400	491.1861	30.511
5	15	600	500	400	400	341.1014	25.902
4	12	600	500	400	400	218.3049	20.522
3	9	600	500	400	400	122.7965	14.675

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
2	6	600	500	400	400	54.5762	8.69
1	3	600	500	400	400	13.6441	3.159
0	0	600	500	400	400	0	0
8	24	600	500	400	350	733.5016	37.247
7	21	600	500	400	350	635.3843	34.906
6	18	600	500	400	350	466.8129	31.277
5	15	600	500	400	350	324.1756	26.536
4	12	600	500	400	350	207.4724	20.993
3	9	600	500	400	350	116.7032	14.967
2	6	600	500	400	350	51.8681	8.811
1	3	600	500	400	350	12.967	3.164
0	0	600	500	400	350	0	0
8	24	600	500	350	350	660.1292	40.488
7	21	600	500	350	350	573.7545	37.873
6	18	600	500	350	350	421.5339	33.89
5	15	600	500	350	350	292.7319	28.693
4	12	600	500	350	350	187.3484	22.61
3	9	600	500	350	350	105.3835	16
2	6	600	500	350	350	46.8371	9.289
1	3	600	500	350	350	11.7093	3.246
0	0	600	500	350	350	0	0
8	24	600	450	600	600	1242.5395	28.986
7	21	600	450	600	600	1034.9269	27.146
6	18	600	450	600	600	760.3545	24.302
5	15	600	450	600	600	528.0239	20.69
4	12	600	450	600	600	337.9353	16.565
3	9	600	450	600	600	190.0886	12.145
2	6	600	450	600	600	84.4838	7.615
1	3	600	450	600	600	21.121	3.197
0	0	600	450	600	600	0	0
8	24	600	450	600	550	1199.1512	28.967
7	21	600	450	600	550	1001.8185	27.137
6	18	600	450	600	550	736.0299	24.301
5	15	600	450	600	550	511.1319	20.69
4	12	600	450	600	550	327.1244	16.56
3	9	600	450	600	550	184.0075	12.131
2	6	600	450	600	550	81.7811	7.588
1	3	600	450	600	550	20.4453	3.163
0	0	600	450	600	550	0	0
8	24	600	450	600	500	1153.6585	29.001
7	21	600	450	600	500	966.9549	27.179
6	18	600	450	600	500	710.4159	24.344
5	15	600	450	600	500	493.3444	20.727

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
4	12	600	450	600	500	315.7404	16.584
3	9	600	450	600	500	177.604	12.136
2	6	600	450	600	500	78.9351	7.571
1	3	600	450	600	500	19.7338	3.131
0	0	600	450	600	500	0	0
8	24	600	450	600	450	1105.6214	29.107
7	21	600	450	600	450	929.9485	27.287
6	18	600	450	600	450	683.2275	24.448
5	15	600	450	600	450	474.4635	20.815
4	12	600	450	600	450	303.6566	16.648
3	9	600	450	600	450	170.8069	12.168
2	6	600	450	600	450	75.9142	7.567
1	3	600	450	600	450	18.9785	3.101
0	0	600	450	600	450	0	0
8	24	600	450	550	550	1122.1072	29.918
7	21	600	450	550	550	940.2459	28.047
6	18	600	450	550	550	690.7929	25.128
5	15	600	450	550	550	479.7173	21.393
4	12	600	450	550	550	307.0191	17.107
3	9	600	450	550	550	172.6982	12.498
2	6	600	450	550	550	76.7548	7.764
1	3	600	450	550	550	19.1887	3.171
0	0	600	450	550	500	0	0
8	24	600	450	550	500	1078.7953	30.036
7	21	600	450	550	500	906.8374	28.166
6	18	600	450	550	500	666.2479	25.241
5	15	600	450	550	500	462.6722	21.489
4	12	600	450	550	500	296.1102	17.176
3	9	600	450	550	500	166.562	12.534
2	6	600	450	550	500	74.0275	7.763
1	3	600	450	550	500	18.5069	3.144
0	0	600	450	550	500	0	0
8	24	600	450	550	450	1033.1285	30.236
7	21	600	450	550	450	871.4236	28.362
6	18	600	450	550	450	640.2296	25.422
5	15	600	450	550	450	444.6039	21.642
4	12	600	450	550	450	284.5465	17.289
3	9	600	450	550	450	160.0574	12.599
2	6	600	450	550	450	71.1366	7.777
1	3	600	450	550	450	17.7842	3.12
0	0	600	450	550	450	0	0
8	24	600	450	550	400	984.5593	30.548
7	21	600	450	550	400	833.5167	28.662

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
6	18	600	450	550	400	612.3796	25.696
5	15	600	450	550	400	425.2636	21.873
4	12	600	450	550	400	272.1687	17.463
3	9	600	450	550	400	153.0949	12.704
2	6	600	450	550	400	68.0422	7.81
1	3	600	450	550	400	17.0105	3.099
0	0	600	450	550	400	0	0
8	24	600	450	500	500	999.6041	31.375
7	21	600	450	500	500	842.8758	29.436
6	18	600	450	500	500	619.2557	26.389
5	15	600	450	500	500	430.0387	22.461
4	12	600	450	500	500	275.2247	17.929
3	9	600	450	500	500	154.8139	13.037
2	6	600	450	500	500	68.8062	8.006
1	3	600	450	500	500	17.2015	3.168
0	0	600	450	500	500	0	0
8	24	600	450	500	450	956.718	31.681
7	21	600	450	500	450	809.3883	29.728
6	18	600	450	500	450	594.6526	26.655
5	15	600	450	500	450	412.9532	22.685
4	12	600	450	500	450	264.2901	18.096
3	9	600	450	500	450	148.6632	13.138
2	6	600	450	500	450	66.0725	8.038
1	3	600	450	500	450	16.5181	3.15
0	0	600	450	500	450	0	0
8	24	600	450	500	400	911.2545	32.111
7	21	600	450	500	400	773.6639	30.136
6	18	600	450	500	400	568.4062	27.024
5	15	600	450	500	400	394.7265	22.994
4	12	600	450	500	400	252.625	18.329
3	9	600	450	500	400	142.1015	13.281
2	6	600	450	500	400	63.1562	8.09
1	3	600	450	500	400	15.7891	3.136
0	0	600	450	500	400	0	0
8	24	600	450	500	350	862.5746	32.715
7	21	600	450	500	350	735.1271	30.704
6	18	600	450	500	350	540.0934	27.537
5	15	600	450	500	350	375.0649	23.424
4	12	600	450	500	350	240.0415	18.653
3	9	600	450	500	350	135.0233	13.485
2	6	600	450	500	350	60.0104	8.171
1	3	600	450	500	350	15.0026	3.127
0	0	600	450	500	350	0	0

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
8	24	600	450	450	450	877.3053	33.515
7	21	600	450	450	450	744.5683	31.451
6	18	600	450	450	450	547.0298	28.204
5	15	600	450	450	450	379.8818	23.988
4	12	600	450	450	450	243.1243	19.099
3	9	600	450	450	450	136.7574	13.803
2	6	600	450	450	450	60.7811	8.357
1	3	600	450	450	450	15.1953	3.192
0	0	600	450	450	450	0	0
8	24	600	450	450	400	835.4526	34.075
7	21	600	450	450	400	711.4548	31.976
6	18	600	450	450	400	522.7015	28.675
5	15	600	450	450	400	362.9871	24.382
4	12	600	450	450	400	232.3118	19.393
3	9	600	450	450	400	130.6754	13.986
2	6	600	450	450	400	58.0779	8.428
1	3	600	450	450	400	14.5195	3.184
0	0	600	450	450	400	0	0
8	24	600	450	450	350	790.9021	34.822
7	21	600	450	450	350	675.9587	32.672
6	18	600	450	450	350	496.6227	29.297
5	15	600	450	450	350	344.8769	24.9
4	12	600	450	450	350	220.7212	19.783
3	9	600	450	450	350	124.1557	14.23
2	6	600	450	450	350	55.1803	8.528
1	3	600	450	450	350	13.7951	3.182
0	0	600	450	450	350	0	0
8	24	600	450	400	400	758.5522	36.521
7	21	600	450	400	400	648.0417	34.251
6	18	600	450	400	400	476.1122	30.704
5	15	600	450	400	400	330.6335	26.078
4	12	600	450	400	400	211.6054	20.686
3	9	600	450	400	400	119.0281	14.831
2	6	600	450	400	400	52.9014	8.829
1	3	600	450	400	400	13.2253	3.246
0	0	600	450	400	400	0	0
8	24	600	450	400	350	718.6671	37.418
7	21	600	450	400	350	616.0611	35.079
6	18	600	450	400	350	452.6163	31.438
5	15	600	450	400	350	314.3169	26.686
4	12	600	450	400	350	201.1628	21.14
3	9	600	450	400	350	113.1541	15.114
2	6	600	450	400	350	50.2907	8.947

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
1	3	600	450	400	350	12.5727	3.249
0	0	600	450	400	350	0	0
8	24	600	450	350	350	647.5559	40.577
7	21	600	450	350	350	556.8581	37.98
6	18	600	450	350	350	409.1202	34.001
5	15	600	450	350	350	284.1113	28.809
4	12	600	450	350	350	181.8312	22.737
3	9	600	450	350	350	102.2801	16.14
2	6	600	450	350	350	45.4578	9.424
1	3	600	450	350	350	11.3645	3.329
0	0	600	450	350	350	0	0
8	24	550	550	600	600	1235.3565	29.317
7	21	550	550	600	600	1038.2607	27.506
6	18	550	550	600	600	762.8038	24.663
5	15	550	550	600	600	529.7249	21.029
4	12	550	550	600	600	339.0239	16.865
3	9	550	550	600	600	190.7009	12.391
2	6	550	550	600	600	84.756	7.794
1	3	550	550	600	600	21.189	3.291
0	0	550	550	600	600	0	0
8	24	550	550	600	550	1192.7065	29.307
7	21	550	550	600	550	1005.7166	27.504
6	18	550	550	600	550	738.8938	24.667
5	15	550	550	600	550	513.1207	21.033
4	12	550	550	600	550	328.3973	16.862
3	9	550	550	600	550	184.7235	12.378
2	6	550	550	600	550	82.0993	7.768
1	3	550	550	600	550	20.5248	3.257
0	0	550	550	600	550	0	0
8	24	550	550	600	500	1147.9687	29.349
7	21	550	550	600	500	971.4142	27.553
6	18	550	550	600	500	713.6921	24.716
5	15	550	550	600	500	495.6195	21.074
4	12	550	550	600	500	317.1965	16.89
3	9	550	550	600	500	178.423	12.386
2	6	550	550	600	500	79.2991	7.752
1	3	550	550	600	500	19.8248	3.224
0	0	550	550	600	500	0	0
8	24	550	550	600	450	1100.7031	29.465
7	21	550	550	600	450	934.9606	27.67
6	18	550	550	600	450	686.9099	24.827
5	15	550	550	600	450	477.0207	21.169
4	12	550	550	600	450	305.2933	16.958

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
3	9	550	550	600	450	171.7275	12.42
2	6	550	550	600	450	76.3233	7.749
1	3	550	550	600	450	19.0808	3.194
0	0	550	550	600	450	0	0
8	24	550	550	550	550	1116.8993	30.27
7	21	550	550	550	550	944.8361	28.426
6	18	550	550	550	550	694.1653	25.504
5	15	550	550	550	550	482.0592	21.744
4	12	550	550	550	550	308.5179	17.415
3	9	550	550	550	550	173.5413	12.749
2	6	550	550	550	550	77.1295	7.946
1	3	550	550	550	550	19.2824	3.265
0	0	550	550	550	500	0	0
8	24	550	550	550	500	1074.2521	30.398
7	21	550	550	550	500	911.8973	28.553
6	18	550	550	550	500	669.9654	25.624
5	15	550	550	550	500	465.2537	21.845
4	12	550	550	550	500	297.7624	17.488
3	9	550	550	550	500	167.4913	12.788
2	6	550	550	550	500	74.4406	7.946
1	3	550	550	550	500	18.6101	3.238
0	0	550	550	550	500	0	0
8	24	550	550	550	450	1029.2576	30.609
7	21	550	550	550	450	876.937	28.759
6	18	550	550	550	450	644.2802	25.813
5	15	550	550	550	450	447.4168	22.005
4	12	550	550	550	450	286.3468	17.607
3	9	550	550	550	450	161.0701	12.857
2	6	550	550	550	450	71.5867	7.961
1	3	550	550	550	450	17.8967	3.213
0	0	550	550	550	450	0	0
8	24	550	550	550	400	981.3657	30.935
7	21	550	550	550	400	839.4581	29.071
6	18	550	550	550	400	616.7447	26.099
5	15	550	550	550	400	428.2949	22.245
4	12	550	550	550	400	274.1088	17.787
3	9	550	550	550	400	154.1862	12.967
2	6	550	550	550	400	68.5272	7.997
1	3	550	550	550	400	17.1318	3.193
0	0	550	550	550	400	0	0
8	24	550	550	500	500	996.1317	31.756
7	21	550	550	500	500	848.4192	29.84
6	18	550	550	500	500	623.3284	26.787

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
5	15	550	550	500	500	432.8669	22.83
4	12	550	550	500	500	277.0348	18.251
3	9	550	550	500	500	155.8321	13.299
2	6	550	550	500	500	69.2587	8.193
1	3	550	550	500	500	17.3147	3.262
0	0	550	550	500	500	0	0
8	24	550	550	500	450	953.8102	32.074
7	21	550	550	500	450	815.2808	30.145
6	18	550	550	500	450	598.9818	27.064
5	15	550	550	500	450	415.9596	23.062
4	12	550	550	500	450	266.2141	18.425
3	9	550	550	500	450	149.7454	13.404
2	6	550	550	500	450	66.5535	8.227
1	3	550	550	500	450	16.6384	3.244
0	0	550	550	500	450	0	0
8	24	550	550	500	400	908.9071	32.52
7	21	550	550	500	400	779.8733	30.566
6	18	550	550	500	400	572.9681	27.446
5	15	550	550	500	400	397.8945	23.382
4	12	550	550	500	400	254.6525	18.666
3	9	550	550	500	400	143.242	13.554
2	6	550	550	500	400	63.6631	8.283
1	3	550	550	500	400	15.9158	3.23
0	0	550	550	500	400	0	0
8	24	550	550	500	350	860.7775	33.142
7	21	550	550	500	350	741.6076	31.153
6	18	550	550	500	350	544.8546	27.974
5	15	550	550	500	350	378.3712	23.825
4	12	550	550	500	350	242.1576	19
3	9	550	550	500	350	136.2136	13.765
2	6	550	550	500	350	60.5394	8.368
1	3	550	550	500	350	15.1348	3.221
0	0	550	550	500	350	0	0
8	24	550	550	450	450	875.2394	33.934
7	21	550	550	450	450	750.6894	31.893
6	18	550	550	450	450	551.5269	28.636
5	15	550	550	450	450	383.0048	24.386
4	12	550	550	450	450	245.1231	19.444
3	9	550	550	450	450	137.8817	14.081
2	6	550	550	450	450	61.2808	8.554
1	3	550	550	450	450	15.3202	3.287
0	0	550	550	450	450	0	0
8	24	550	550	450	400	833.8283	34.513

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
7	21	550	550	450	400	717.7844	32.435
6	18	550	550	450	400	527.3518	29.122
5	15	550	550	450	400	366.2165	24.792
4	12	550	550	450	400	234.3786	19.749
3	9	550	550	450	400	131.8379	14.272
2	6	550	550	450	400	58.5946	8.63
1	3	550	550	450	400	14.6487	3.28
0	0	550	550	450	400	0	0
8	24	550	550	450	350	789.7024	35.281
7	21	550	550	450	350	682.4486	33.152
6	18	550	550	450	350	501.3908	29.763
5	15	550	550	450	350	348.1881	25.327
4	12	550	550	450	350	222.8404	20.152
3	9	550	550	450	350	125.3477	14.526
2	6	550	550	450	350	55.7101	8.735
1	3	550	550	450	350	13.9275	3.278
0	0	550	550	450	350	0	0
8	24	550	550	400	400	757.5039	36.996
7	21	550	550	400	400	654.332	34.747
6	18	550	550	400	400	480.7337	31.186
5	15	550	550	400	400	333.8429	26.519
4	12	550	550	400	400	213.6594	21.067
3	9	550	550	400	400	120.1834	15.137
2	6	550	550	400	400	53.4149	9.042
1	3	550	550	400	400	13.3537	3.343
0	0	550	550	400	400	0	0
8	24	550	550	400	350	717.9266	37.919
7	21	550	550	400	350	622.4149	35.599
6	18	550	550	400	350	457.2844	31.943
5	15	550	550	400	350	317.5586	27.147
4	12	550	550	400	350	203.2375	21.537
3	9	550	550	400	350	114.3211	15.431
2	6	550	550	400	350	50.8094	9.166
1	3	550	550	400	350	12.7023	3.348
0	0	550	550	400	350	0	0
8	24	550	550	350	350	647.1326	41.131
7	21	550	550	350	350	562.9407	38.555
6	18	550	550	350	350	413.5891	34.557
5	15	550	550	350	350	287.2147	29.316
4	12	550	550	350	350	183.8174	23.173
3	9	550	550	350	350	103.3973	16.486
2	6	550	550	350	350	45.9543	9.659
1	3	550	550	350	350	11.4886	3.431

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
0	0	550	550	350	350	0	0
8	24	550	500	600	600	1198.6613	29.988
7	21	550	500	600	600	999.7403	28.122
6	18	550	500	600	600	734.5031	25.207
5	15	550	500	600	600	510.0716	21.491
4	12	550	500	600	600	326.4458	17.24
3	9	550	500	600	600	183.6258	12.679
2	6	550	500	600	600	81.6115	7.997
1	3	550	500	600	600	20.4029	3.405
0	0	550	500	600	600	0	0
8	24	550	500	600	550	1157.983	29.941
7	21	550	500	600	550	968.7832	28.088
6	18	550	500	600	550	711.7591	25.181
5	15	550	500	600	550	494.2772	21.47
4	12	550	500	600	550	316.3374	17.218
3	9	550	500	600	550	177.9398	12.653
2	6	550	500	600	550	79.0843	7.962
1	3	550	500	600	550	19.7711	3.367
0	0	550	500	600	550	0	0
8	24	550	500	600	500	1115.3046	29.946
7	21	550	500	600	500	936.1619	28.101
6	18	550	500	600	500	687.7924	25.199
5	15	550	500	600	500	477.6336	21.485
4	12	550	500	600	500	305.6855	17.225
3	9	550	500	600	500	171.9481	12.645
2	6	550	500	600	500	76.4214	7.938
1	3	550	500	600	500	19.1053	3.331
0	0	550	500	600	500	0	0
8	24	550	500	600	450	1070.2015	30.021
7	21	550	500	600	450	901.5026	28.181
6	18	550	500	600	450	662.3284	25.276
5	15	550	500	600	450	459.9503	21.551
4	12	550	500	600	450	294.3682	17.271
3	9	550	500	600	450	165.5821	12.664
2	6	550	500	600	450	73.592	7.926
1	3	550	500	600	450	18.398	3.296
0	0	550	500	600	450	0	0
8	24	550	500	550	550	1086.5609	30.844
7	21	550	500	550	550	911.7759	28.952
6	18	550	500	550	550	669.8761	25.968
5	15	550	500	550	550	465.1918	22.139
4	12	550	500	550	550	297.7227	17.739
3	9	550	500	550	550	167.469	13.002

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
2	6	550	500	550	550	74.4307	8.129
1	3	550	500	550	550	18.6077	3.37
0	0	550	500	550	500	0	0
8	24	550	500	550	500	1045.7747	30.935
7	21	550	500	550	500	880.3877	29.046
6	18	550	500	550	500	646.8155	26.057
5	15	550	500	550	500	449.1774	22.214
4	12	550	500	550	500	287.4735	17.792
3	9	550	500	550	500	161.7039	13.027
2	6	550	500	550	500	71.8684	8.121
1	3	550	500	550	500	17.9671	3.34
0	0	550	500	550	500	0	0
8	24	550	500	550	450	1002.7196	31.105
7	21	550	500	550	450	847.0705	29.214
6	18	550	500	550	450	622.3375	26.214
5	15	550	500	550	450	432.1788	22.346
4	12	550	500	550	450	276.5945	17.889
3	9	550	500	550	450	155.5844	13.08
2	6	550	500	550	450	69.1486	8.128
1	3	550	500	550	450	17.2872	3.312
0	0	550	500	550	450	0	0
8	24	550	500	550	400	956.8593	31.386
7	21	550	500	550	400	811.3466	29.486
6	18	550	500	550	400	596.0914	26.463
5	15	550	500	550	400	413.9524	22.557
4	12	550	500	550	400	264.9295	18.046
3	9	550	500	550	400	149.0228	13.175
2	6	550	500	550	400	66.2324	8.155
1	3	550	500	550	400	16.5581	3.288
0	0	550	500	550	400	0	0
8	24	550	500	500	500	971.7509	32.224
7	21	550	500	500	500	820.642	30.272
6	18	550	500	500	500	602.9207	27.167
5	15	550	500	500	500	418.6949	23.154
4	12	550	500	500	500	267.9647	18.521
3	9	550	500	500	500	150.7302	13.515
2	6	550	500	500	500	66.9912	8.357
1	3	550	500	500	500	16.7478	3.36
0	0	550	500	500	500	0	0
8	24	450	350	600	600	872.1751	39.603
7	21	450	350	600	600	702.7271	37.171
6	18	450	350	600	600	516.2893	33.358
5	15	450	350	600	600	358.5342	28.527

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
4	12	450	350	600	600	229.4619	23.016
3	9	450	350	600	600	129.0723	17.114
2	6	450	350	600	600	57.3655	11.058
1	3	450	350	600	600	14.3414	5.049
0	0	450	350	600	600	0	0
8	24	450	350	600	550	847.3959	39.221
7	21	450	350	600	550	684.1152	36.819
6	18	450	350	600	550	502.6152	33.046
5	15	450	350	600	550	349.0384	28.259
4	12	450	350	600	550	223.3845	22.795
3	9	450	350	600	550	125.6538	16.942
2	6	450	350	600	550	55.8461	10.932
1	3	450	350	600	550	13.9615	4.97
0	0	450	350	600	550	0	0
8	24	450	350	600	500	821.4643	38.871
7	21	450	350	600	500	664.6008	36.498
6	18	450	350	600	500	488.2781	32.761
5	15	450	350	600	500	339.082	28.015
4	12	450	350	600	500	217.0125	22.594
3	9	450	350	600	500	122.0695	16.782
2	6	450	350	600	500	54.2531	10.813
1	3	450	350	600	500	13.5633	4.89
0	0	450	350	600	500	0	0
8	24	450	350	600	450	794.1272	38.566
7	21	450	350	600	450	643.976	36.22
6	18	450	350	600	450	473.1252	32.517
5	15	450	350	600	450	328.5592	27.805
4	12	450	350	600	450	210.2779	22.419
3	9	450	350	600	450	118.2813	16.641
2	6	450	350	600	450	52.5695	10.702
1	3	450	350	600	450	13.1424	4.812
0	0	450	350	600	450	0	0
8	24	450	350	550	550	809.4242	39.591
7	21	450	350	550	550	654.7387	37.183
6	18	450	350	550	550	481.0325	33.38
5	15	450	350	550	550	334.0504	28.542
4	12	450	350	550	550	213.7922	23.01
3	9	450	350	550	550	120.2581	17.075
2	6	450	350	550	550	53.4481	10.975
1	3	450	350	550	550	13.362	4.924
0	0	450	350	550	500	0	0
8	24	450	350	550	500	784.3539	39.332
7	21	450	350	550	500	635.7962	36.947

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
6	18	450	350	550	500	467.1155	33.173
5	15	450	350	550	500	324.3858	28.364
4	12	450	350	550	500	207.6069	22.861
3	9	450	350	550	500	116.7789	16.954
2	6	450	350	550	500	51.9017	10.878
1	3	450	350	550	500	12.9754	4.853
0	0	450	350	550	500	0	0
8	24	450	350	550	450	757.8837	39.128
7	21	450	350	550	450	615.7369	36.765
6	18	450	350	550	450	452.3781	33.014
5	15	450	350	550	450	314.1515	28.227
4	12	450	350	550	450	201.0569	22.745
3	9	450	350	550	450	113.0945	16.854
2	6	450	350	550	450	50.2642	10.792
1	3	450	350	550	450	12.5661	4.783
0	0	450	350	550	450	0	0
8	24	450	350	550	400	729.6557	39.003
7	21	450	350	550	400	594.2637	36.658
6	18	450	350	550	400	436.6019	32.925
5	15	450	350	550	400	303.1957	28.15
4	12	450	350	550	400	194.0453	22.674
3	9	450	350	550	400	109.1505	16.786
2	6	450	350	550	400	48.5113	10.723
1	3	450	350	550	400	12.1278	4.715
0	0	450	350	550	400	0	0
8	24	450	350	500	500	743.6619	40.033
7	21	450	350	500	500	604.0532	37.625
6	18	450	350	500	500	443.7942	33.792
5	15	450	350	500	500	308.1904	28.889
4	12	450	350	500	500	197.2419	23.267
3	9	450	350	500	500	110.9485	17.22
2	6	450	350	500	500	49.3105	10.993
1	3	450	350	500	500	12.3276	4.824
0	0	450	350	500	500	0	0
8	24	450	350	500	450	718.1299	39.944
7	21	450	350	500	450	584.6062	37.551
6	18	450	350	500	450	429.5066	33.73
5	15	450	350	500	450	298.2684	28.835
4	12	450	350	500	450	190.8918	23.215
3	9	450	350	500	450	107.3766	17.167
2	6	450	350	500	450	47.723	10.934
1	3	450	350	500	450	11.9307	4.764
0	0	450	350	500	450	0	0

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
8	24	450	350	500	400	690.8877	39.949
7	21	450	350	500	400	563.7716	37.566
6	18	450	350	500	400	414.1996	33.749
5	15	450	350	500	400	287.6386	28.85
4	12	450	350	500	400	184.0887	23.217
3	9	450	350	500	400	103.5499	17.151
2	6	450	350	500	400	46.0222	10.894
1	3	450	350	500	400	11.5055	4.706
0	0	450	350	500	400	0	0
8	24	450	350	500	350	661.4502	40.089
7	21	450	350	500	350	541.1431	37.709
6	18	450	350	500	350	397.5745	33.884
5	15	450	350	500	350	276.0934	28.962
4	12	450	350	500	350	176.6998	23.296
3	9	450	350	500	350	99.3936	17.187
2	6	450	350	500	350	44.1749	10.881
1	3	450	350	500	350	11.0437	4.653
0	0	450	350	500	350	0	0
8	24	450	350	450	450	674.6542	41.089
7	21	450	350	450	450	550.3891	38.648
6	18	450	350	450	450	404.3675	34.726
5	15	450	350	450	450	280.8108	29.679
4	12	450	350	450	450	179.7189	23.871
3	9	450	350	450	450	101.0919	17.606
2	6	450	350	450	450	44.9297	11.141
1	3	450	350	450	450	11.2324	4.757
0	0	450	350	450	450	0	0
8	24	450	350	450	400	648.5737	41.24
7	21	450	350	450	400	530.3264	38.799
6	18	450	350	450	400	389.6276	34.867
5	15	450	350	450	400	270.5747	29.797
4	12	450	350	450	400	173.1678	23.954
3	9	450	350	450	400	97.4069	17.646
2	6	450	350	450	400	43.292	11.132
1	3	450	350	450	400	10.823	4.71
0	0	450	350	450	400	0	0
8	24	450	350	450	350	620.455	41.543
7	21	450	350	450	350	508.5856	39.094
6	18	450	350	450	350	373.6547	35.138
5	15	450	350	450	350	259.4825	30.024
4	12	450	350	450	350	166.0688	24.122
3	9	450	350	450	350	93.4137	17.744
2	6	450	350	450	350	41.5172	11.153

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
1	3	450	350	450	350	10.3793	4.669
0	0	450	350	450	350	0	0
8	24	450	350	400	400	602.8715	42.966
7	21	450	350	400	400	494.0328	40.44
6	18	450	350	400	400	362.9629	36.35
5	15	450	350	400	400	252.0575	31.052
4	12	450	350	400	400	161.3168	24.927
3	9	450	350	400	400	90.7407	18.302
2	6	450	350	400	400	40.3292	11.451
1	3	450	350	400	400	10.0823	4.731
0	0	450	350	400	400	0	0
8	24	450	350	400	350	576.4215	43.447
7	21	450	350	400	350	473.4599	40.899
6	18	450	350	400	350	347.8481	36.767
5	15	450	350	400	350	241.5612	31.402
4	12	450	350	400	350	154.5992	25.191
3	9	450	350	400	350	86.962	18.464
2	6	450	350	400	350	38.6498	11.507
1	3	450	350	400	350	9.6624	4.701
0	0	450	350	400	350	0	0
8	24	450	350	350	350	530.0398	45.895
7	21	450	350	350	350	436.3106	43.207
6	18	450	350	350	350	320.5547	38.843
5	15	450	350	350	350	222.6075	33.153
4	12	450	350	350	350	142.4688	26.545
3	9	450	350	350	350	80.1387	19.373
2	6	450	350	350	350	35.6172	11.952
1	3	450	350	350	350	8.9043	4.753
0	0	450	350	350	350	0	0
8	24	400	400	600	600	809.0033	42.521
7	21	400	400	600	600	652.3159	39.983
6	18	400	400	600	600	479.2525	35.942
5	15	400	400	600	600	332.8142	30.793
4	12	400	400	600	600	213.0011	24.901
3	9	400	400	600	600	119.8131	18.576
2	6	400	400	600	600	53.2503	12.069
1	3	400	400	600	600	13.3126	5.586
0	0	400	400	600	600	0	0
8	24	400	400	600	550	786.9034	42.068
7	21	400	400	600	550	635.7706	39.562
6	18	400	400	600	550	467.0968	35.566
5	15	400	400	600	550	324.3728	30.47
4	12	400	400	600	550	207.5986	24.636

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
3	9	400	400	600	550	116.7742	18.369
2	6	400	400	600	550	51.8996	11.92
1	3	400	400	600	550	12.9749	5.495
0	0	400	400	600	550	0	0
8	24	400	400	600	500	763.8069	41.642
7	21	400	400	600	500	618.4495	39.169
6	18	400	400	600	500	454.3711	35.215
5	15	400	400	600	500	315.5355	30.168
4	12	400	400	600	500	201.9427	24.386
3	9	400	400	600	500	113.5928	18.174
2	6	400	400	600	500	50.4857	11.777
1	3	400	400	600	500	12.6214	5.404
0	0	400	400	600	500	0	0
8	24	400	400	600	450	739.496	41.258
7	21	400	400	600	450	600.174	38.815
6	18	400	400	600	450	440.9442	34.901
5	15	400	400	600	450	306.2112	29.897
4	12	400	400	600	450	195.9752	24.161
3	9	400	400	600	450	110.236	17.995
2	6	400	400	600	450	48.9938	11.643
1	3	400	400	600	450	12.2484	5.314
0	0	400	400	600	450	0	0
8	24	400	400	550	550	754.1077	42.334
7	21	400	400	550	550	610.4817	39.826
6	18	400	400	550	550	448.5172	35.808
5	15	400	400	550	550	311.4703	30.672
4	12	400	400	550	550	199.341	24.785
3	9	400	400	550	550	112.1293	18.454
2	6	400	400	550	550	49.8352	11.933
1	3	400	400	550	550	12.4588	5.436
0	0	400	400	550	500	0	0
8	24	400	400	550	500	731.7798	42.002
7	21	400	400	550	500	593.6709	39.52
6	18	400	400	550	500	436.1664	35.537
5	15	400	400	550	500	302.8933	30.438
4	12	400	400	550	500	193.8517	24.59
3	9	400	400	550	500	109.0416	18.298
2	6	400	400	550	500	48.4629	11.814
1	3	400	400	550	500	12.1157	5.354
0	0	400	400	550	500	0	0
8	24	400	400	550	450	708.2319	41.72
7	21	400	400	550	450	575.8913	39.263
6	18	400	400	550	450	423.1038	35.31

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
5	15	400	400	550	450	293.8221	30.242
4	12	400	400	550	450	188.0461	24.424
3	9	400	400	550	450	105.7759	18.162
2	6	400	400	550	450	47.0115	11.705
1	3	400	400	550	450	11.7529	5.274
0	0	400	400	550	450	0	0
8	24	400	400	550	400	683.1492	41.514
7	21	400	400	550	400	556.8819	39.078
6	18	400	400	550	400	409.1377	35.148
5	15	400	400	550	400	284.1234	30.102
4	12	400	400	550	400	181.839	24.302
3	9	400	400	550	400	102.2844	18.056
2	6	400	400	550	400	45.4597	11.611
1	3	400	400	550	400	11.3649	5.194
0	0	400	400	550	400	0	0
8	24	400	400	500	500	696.5747	42.589
7	21	400	400	500	500	566.2896	40.089
6	18	400	400	500	500	416.0495	36.055
5	15	400	400	500	500	288.9233	30.877
4	12	400	400	500	500	184.9109	24.925
3	9	400	400	500	500	104.0124	18.514
2	6	400	400	500	500	46.2277	11.899
1	3	400	400	500	500	11.5569	5.313
0	0	400	400	500	500	0	0
8	24	400	400	500	450	673.8248	42.425
7	21	400	400	500	450	549.0237	39.943
6	18	400	400	500	450	403.3643	35.928
5	15	400	400	500	450	280.1141	30.766
4	12	400	400	500	450	179.273	24.827
3	9	400	400	500	450	100.8411	18.427
2	6	400	400	500	450	44.8183	11.818
1	3	400	400	500	450	11.2046	5.242
0	0	400	400	500	450	0	0
8	24	400	400	500	400	649.5605	42.349
7	21	400	400	500	400	530.533	39.881
6	18	400	400	500	400	389.7794	35.877
5	15	400	400	500	400	270.6801	30.719
4	12	400	400	500	400	173.2353	24.78
3	9	400	400	500	400	97.4448	18.374
2	6	400	400	500	400	43.3088	11.755
1	3	400	400	500	400	10.8272	5.174
0	0	400	400	500	400	0	0
8	24	400	400	500	350	623.3423	42.402

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
7	21	400	400	500	350	510.4496	39.941
6	18	400	400	500	350	375.0242	35.937
5	15	400	400	500	350	260.4335	30.767
4	12	400	400	500	350	166.6774	24.807
3	9	400	400	500	350	93.7561	18.372
2	6	400	400	500	350	41.6694	11.719
1	3	400	400	500	350	10.4173	5.109
0	0	400	400	500	350	0	0
8	24	400	400	450	450	635.9755	43.445
7	21	400	400	450	450	519.3076	40.921
6	18	400	400	450	450	381.5321	36.816
5	15	400	400	450	450	264.9529	31.518
4	12	400	400	450	450	169.5698	25.409
3	9	400	400	450	450	95.383	18.814
2	6	400	400	450	450	42.3925	11.995
1	3	400	400	450	450	10.5981	5.223
0	0	400	400	450	450	0	0
8	24	400	400	450	400	612.6457	43.518
7	21	400	400	450	400	501.4201	40.999
6	18	400	400	450	400	368.3903	36.89
5	15	400	400	450	400	255.8266	31.578
4	12	400	400	450	400	163.729	25.446
3	9	400	400	450	400	92.0976	18.82
2	6	400	400	450	400	40.9323	11.966
1	3	400	400	450	400	10.2331	5.166
0	0	400	400	450	400	0	0
8	24	400	400	450	350	587.4665	43.737
7	21	400	400	450	350	482.0132	41.215
6	18	400	400	450	350	354.1321	37.09
5	15	400	400	450	350	245.9251	31.744
4	12	400	400	450	350	157.392	25.566
3	9	400	400	450	350	88.533	18.883
2	6	400	400	450	350	39.348	11.966
1	3	400	400	450	350	9.837	5.114
0	0	400	400	450	350	0	0
8	24	400	400	400	400	572.3901	45.111
7	21	400	400	400	400	469.5086	42.516
6	18	400	400	400	400	344.9451	38.262
5	15	400	400	400	400	239.5452	32.739
4	12	400	400	400	400	153.3089	26.347
3	9	400	400	400	400	86.2363	19.426
2	6	400	400	400	400	38.3272	12.258
1	3	400	400	400	400	9.5818	5.175

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
0	0	400	400	400	400	0	0
8	24	400	400	400	350	548.5238	45.514
7	21	400	400	400	350	450.9949	42.902
6	18	400	400	400	350	331.3432	38.614
5	15	400	400	400	350	230.0994	33.033
4	12	400	400	400	350	147.2636	26.566
3	9	400	400	400	350	82.8358	19.558
2	6	400	400	400	350	36.8159	12.297
1	3	400	400	400	350	9.204	5.136
0	0	400	400	400	350	0	0
8	24	400	400	350	350	506.9783	47.828
7	21	400	400	350	350	417.7549	45.09
6	18	400	400	350	350	306.922	40.585
5	15	400	400	350	350	213.1402	34.697
4	12	400	400	350	350	136.4098	27.855
3	9	400	400	350	350	76.7305	20.426
2	6	400	400	350	350	34.1024	12.722
1	3	400	400	350	350	8.5256	5.178
0	0	400	400	350	350	0	0
8	24	400	350	600	600	765.7423	44.693
7	21	400	350	600	600	613.6329	42.014
6	18	400	350	600	600	450.8323	37.762
5	15	400	350	600	600	313.078	32.353
4	12	400	350	600	600	200.3699	26.171
3	9	400	350	600	600	112.7081	19.537
2	6	400	350	600	600	50.0925	12.717
1	3	400	350	600	600	12.5231	5.922
0	0	400	350	600	600	0	0
8	24	400	350	600	550	745.2318	44.173
7	21	400	350	600	550	598.2678	41.53
6	18	400	350	600	550	439.5437	37.328
5	15	400	350	600	550	305.2387	31.98
4	12	400	350	600	550	195.3528	25.864
3	9	400	350	600	550	109.8859	19.3
2	6	400	350	600	550	48.8382	12.549
1	3	400	350	600	550	12.2095	5.823
0	0	400	350	600	550	0	0
8	24	400	350	600	500	723.8229	43.677
7	21	400	350	600	500	582.2085	41.069
6	18	400	350	600	500	427.745	36.917
5	15	400	350	600	500	297.0451	31.626
4	12	400	350	600	500	190.1089	25.573
3	9	400	350	600	500	106.9363	19.073

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
2	6	400	350	600	500	47.5272	12.386
1	3	400	350	600	500	11.8818	5.723
0	0	400	350	600	500	0	0
8	24	400	350	600	450	701.3215	43.217
7	21	400	350	600	450	565.2975	40.644
6	18	400	350	600	450	415.3206	36.538
5	15	400	350	600	450	288.4171	31.3
4	12	400	350	600	450	184.587	25.303
3	9	400	350	600	450	103.8302	18.861
2	6	400	350	600	450	46.1467	12.23
1	3	400	350	600	450	11.5367	5.624
0	0	400	350	600	450	0	0
8	24	400	350	550	550	715.5567	44.347
7	21	400	350	550	550	575.4631	41.705
6	18	400	350	550	550	422.7892	37.49
5	15	400	350	550	550	293.6036	32.113
4	12	400	350	550	550	187.9063	25.958
3	9	400	350	550	550	105.6973	19.345
2	6	400	350	550	550	46.9766	12.537
1	3	400	350	550	550	11.7441	5.754
0	0	400	350	550	500	0	0
8	24	400	350	550	500	694.8795	43.945
7	21	400	350	550	500	559.9017	41.333
6	18	400	350	550	500	411.3563	37.159
5	15	400	350	550	500	285.6641	31.828
4	12	400	350	550	500	182.825	25.721
3	9	400	350	550	500	102.8391	19.158
2	6	400	350	550	500	45.7063	12.398
1	3	400	350	550	500	11.4266	5.664
0	0	400	350	550	500	0	0
8	24	400	350	550	450	673.1007	43.589
7	21	400	350	550	450	543.4732	41.006
6	18	400	350	550	450	399.2864	36.869
5	15	400	350	550	450	277.2822	31.578
4	12	400	350	550	450	177.4606	25.513
3	9	400	350	550	450	99.8216	18.99
2	6	400	350	550	450	44.3652	12.269
1	3	400	350	550	450	11.0913	5.574
0	0	400	350	550	450	0	0
8	24	400	350	550	400	649.9367	43.302
7	21	400	350	550	400	525.945	40.745
6	18	400	350	550	400	386.4086	36.638
5	15	400	350	550	400	268.3393	31.379

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
4	12	400	350	550	400	171.7371	25.344
3	9	400	350	550	400	96.6021	18.85
2	6	400	350	550	400	42.9343	12.154
1	3	400	350	550	400	10.7336	5.486
0	0	400	350	550	400	0	0
8	24	400	350	500	500	663.0574	44.428
7	21	400	350	500	500	535.26	41.803
6	18	400	350	500	500	393.2523	37.588
5	15	400	350	500	500	273.0918	32.191
4	12	400	350	500	500	174.7788	25.996
3	9	400	350	500	500	98.3131	19.33
2	6	400	350	500	500	43.6947	12.458
1	3	400	350	500	500	10.9237	5.613
0	0	400	350	500	500	0	0
8	24	400	350	500	450	642.0182	44.19
7	21	400	350	500	450	519.3187	41.588
6	18	400	350	500	450	381.5403	37.399
5	15	400	350	500	450	264.9585	32.026
4	12	400	350	500	450	169.5735	25.856
3	9	400	350	500	450	95.3851	19.212
2	6	400	350	500	450	42.3934	12.358
1	3	400	350	500	450	10.5983	5.533
0	0	400	350	500	450	0	0
8	24	400	350	500	400	619.6015	44.035
7	21	400	350	500	400	502.2744	41.452
6	18	400	350	500	400	369.0179	37.281
5	15	400	350	500	400	256.2625	31.923
4	12	400	350	500	400	164.008	25.763
3	9	400	350	500	400	92.2545	19.126
2	6	400	350	500	400	41.002	12.274
1	3	400	350	500	400	10.2505	5.456
0	0	400	350	500	400	0	0
8	24	400	350	500	350	595.4041	44.001
7	21	400	350	500	350	483.7931	41.431
6	18	400	350	500	350	355.4398	37.267
5	15	400	350	500	350	246.8332	31.908
4	12	400	350	500	350	157.9733	25.74
3	9	400	350	500	350	88.86	19.087
2	6	400	350	500	350	39.4933	12.216
1	3	400	350	500	350	9.8733	5.382
0	0	400	350	500	350	0	0
8	24	400	350	450	450	607.7397	45.093
7	21	400	350	450	450	492.5481	42.457

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
6	18	400	350	450	450	361.8721	38.188
5	15	400	350	450	450	251.3001	32.694
4	12	400	350	450	450	160.832	26.371
3	9	400	350	450	450	90.468	19.552
2	6	400	350	450	450	40.208	12.508
1	3	400	350	450	450	10.052	5.504
0	0	400	350	450	450	0	0
8	24	400	350	450	400	586.1524	45.088
7	21	400	350	450	400	476.0449	42.461
6	18	400	350	450	400	349.7473	38.196
5	15	400	350	450	400	242.8801	32.698
4	12	400	350	450	400	155.4432	26.364
3	9	400	350	450	400	87.4368	19.526
2	6	400	350	450	400	38.8608	12.46
1	3	400	350	450	400	9.7152	5.439
0	0	400	350	450	400	0	0
8	24	400	350	450	350	562.8594	45.222
7	21	400	350	450	350	458.1552	42.597
6	18	400	350	450	350	336.6038	38.324
5	15	400	350	450	350	233.7527	32.803
4	12	400	350	450	350	149.6017	26.435
3	9	400	350	450	350	84.151	19.555
2	6	400	350	450	350	37.4004	12.439
1	3	400	350	450	350	9.3501	5.378
0	0	400	350	450	350	0	0
8	24	400	350	400	400	549.4814	46.551
7	21	400	350	400	400	447.1505	43.856
6	18	400	350	400	400	328.5188	39.459
5	15	400	350	400	400	228.138	33.767
4	12	400	350	400	400	146.0083	27.193
3	9	400	350	400	400	82.1297	20.083
2	6	400	350	400	400	36.5021	12.725
1	3	400	350	400	400	9.1255	5.438
0	0	400	350	400	400	0	0
8	24	400	350	400	350	527.3161	46.869
7	21	400	350	400	350	430.0266	44.165
6	18	400	350	400	350	315.9379	39.742
5	15	400	350	400	350	219.4013	34.003
4	12	400	350	400	350	140.4169	27.366
3	9	400	350	400	350	78.9845	20.183
2	6	400	350	400	350	35.1042	12.745
1	3	400	350	400	350	8.7761	5.391
0	0	400	350	400	350	0	0

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
8	24	400	350	350	350	489.0953	49.042
7	21	400	350	350	350	399.6505	46.224
6	18	400	350	350	350	293.6208	41.598
5	15	400	350	350	350	203.9033	35.571
4	12	400	350	350	350	130.4981	28.582
3	9	400	350	350	350	73.4052	21.002
2	6	400	350	350	350	32.6245	13.146
1	3	400	350	350	350	8.1561	5.423
0	0	400	350	350	350	0	0
8	24	350	350	600	600	653.6725	51.851
7	21	350	350	600	600	520.9594	48.83
6	18	350	350	600	600	382.7457	43.962
5	15	350	350	600	600	265.7956	37.742
4	12	350	350	600	600	170.1092	30.611
3	9	350	350	600	600	95.6864	22.943
2	6	350	350	600	600	42.5273	15.038
1	3	350	350	600	600	10.6318	7.133
0	0	350	350	600	600	0	0
8	24	350	350	600	550	637.1612	51.148
7	21	350	350	600	550	508.6117	48.17
6	18	350	350	600	550	373.6739	43.369
5	15	350	350	600	550	259.4958	37.23
4	12	350	350	600	550	166.0773	30.191
3	9	350	350	600	550	93.4185	22.62
2	6	350	350	600	550	41.5193	14.814
1	3	350	350	600	550	10.3798	7.007
0	0	350	350	600	550	0	0
8	24	350	350	600	500	619.9853	50.461
7	21	350	350	600	500	495.7576	47.527
6	18	350	350	600	500	364.2301	42.79
5	15	350	350	600	500	252.9375	36.731
4	12	350	350	600	500	161.88	29.781
3	9	350	350	600	500	91.0575	22.303
2	6	350	350	600	500	40.47	14.592
1	3	350	350	600	500	10.1175	6.879
0	0	350	350	600	500	0	0
8	24	350	350	600	450	602.0073	49.801
7	21	350	350	600	450	482.287	46.91
6	18	350	350	600	450	354.3333	42.236
5	15	350	350	600	450	246.0648	36.252
4	12	350	350	600	450	157.4815	29.386
3	9	350	350	600	450	88.5833	21.997
2	6	350	350	600	450	39.3704	14.375

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
1	3	350	350	600	450	9.8426	6.751
0	0	350	350	600	450	0	0
8	24	350	350	550	550	614.8348	51.081
7	21	350	350	550	550	491.5656	48.113
6	18	350	350	550	550	361.1502	43.317
5	15	350	350	550	550	250.7988	37.178
4	12	350	350	550	550	160.5112	30.133
3	9	350	350	550	550	90.2876	22.551
2	6	350	350	550	550	40.1278	14.731
1	3	350	350	550	550	10.032	6.908
0	0	350	350	550	500	0	0
8	24	350	350	550	500	598.2998	50.493
7	21	350	350	550	500	479.1614	47.564
6	18	350	350	550	500	352.0369	42.824
5	15	350	350	550	500	244.4701	36.752
4	12	350	350	550	500	156.4609	29.782
3	9	350	350	550	500	88.0092	22.278
2	6	350	350	550	500	39.1152	14.536
1	3	350	350	550	500	9.7788	6.792
0	0	350	350	550	500	0	0
8	24	350	350	550	450	580.9515	49.941
7	21	350	350	550	450	466.1261	47.049
6	18	350	350	550	450	342.46	42.363
5	15	350	350	550	450	237.8194	36.354
4	12	350	350	550	450	152.2044	29.452
3	9	350	350	550	450	85.615	22.02
2	6	350	350	550	450	38.0511	14.349
1	3	350	350	550	450	9.5128	6.675
0	0	350	350	550	450	0	0
8	24	350	350	550	400	562.5834	49.445
7	21	350	350	550	400	452.2925	46.589
6	18	350	350	550	400	332.2965	41.951
5	15	350	350	550	400	230.7615	35.997
4	12	350	350	550	400	147.6873	29.155
3	9	350	350	550	400	83.0741	21.784
2	6	350	350	550	400	36.9218	14.172
1	3	350	350	550	400	9.2305	6.558
0	0	350	350	550	400	0	0
8	24	350	350	500	500	574.5003	50.712
7	21	350	350	500	500	460.8698	47.781
6	18	350	350	500	500	338.5983	43.022
5	15	350	350	500	500	235.1377	36.913
4	12	350	350	500	500	150.4881	29.894

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
3	9	350	350	500	500	84.6496	22.331
2	6	350	350	500	500	37.622	14.522
1	3	350	350	500	500	9.4055	6.71
0	0	350	350	500	500	0	0
8	24	350	350	500	450	557.7713	50.283
7	21	350	350	500	450	448.255	47.382
6	18	350	350	500	450	329.3302	42.666
5	15	350	350	500	450	228.7015	36.605
4	12	350	350	500	450	146.369	29.637
3	9	350	350	500	450	82.3326	22.126
2	6	350	350	500	450	36.5922	14.367
1	3	350	350	500	450	9.1481	6.606
0	0	350	350	500	450	0	0
8	24	350	350	500	400	540.0111	49.922
7	21	350	350	500	400	434.8258	47.051
6	18	350	350	500	400	319.4638	42.37
5	15	350	350	500	400	221.8499	36.349
4	12	350	350	500	400	141.9839	29.42
3	9	350	350	500	400	79.866	21.948
2	6	350	350	500	400	35.496	14.226
1	3	350	350	500	400	8.874	6.502
0	0	350	350	500	400	0	0
8	24	350	350	500	350	520.9122	49.666
7	21	350	350	500	350	420.3307	46.819
6	18	350	350	500	350	308.8144	42.165
5	15	350	350	500	350	214.4544	36.169
4	12	350	350	500	350	137.2508	29.263
3	9	350	350	500	350	77.2036	21.811
2	6	350	350	500	350	34.3127	14.106
1	3	350	350	500	350	8.5782	6.401
0	0	350	350	500	350	0	0
8	24	350	350	450	450	532.1135	50.891
7	21	350	350	450	450	428.3803	47.971
6	18	350	350	450	450	314.7284	43.2
5	15	350	350	450	450	218.5614	37.054
4	12	350	350	450	450	139.8793	29.977
3	9	350	350	450	450	78.6821	22.34
2	6	350	350	450	450	34.9698	14.442
1	3	350	350	450	450	8.7425	6.546
0	0	350	350	450	450	0	0
8	24	350	350	450	400	514.9784	50.685
7	21	350	350	450	400	415.362	47.785
6	18	350	350	450	400	305.1639	43.036

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
5	15	350	350	450	400	211.9194	36.91
4	12	350	350	450	400	135.6284	29.85
3	9	350	350	450	400	76.291	22.226
2	6	350	350	450	400	33.9071	14.339
1	3	350	350	450	400	8.4768	6.457
0	0	350	350	450	400	0	0
8	24	350	350	450	350	496.5231	50.601
7	21	350	350	450	350	401.2847	47.715
6	18	350	350	450	350	294.8214	42.977
5	15	350	350	450	350	204.7371	36.855
4	12	350	350	450	350	131.0317	29.792
3	9	350	350	450	350	73.7053	22.161
2	6	350	350	450	350	32.7579	14.262
1	3	350	350	450	350	8.1895	6.37
0	0	350	350	450	350	0	0
8	24	350	350	400	400	487.2231	51.821
7	21	350	350	400	400	393.6774	48.873
6	18	350	350	400	400	289.2324	44.021
5	15	350	350	400	400	200.8558	37.742
4	12	350	350	400	400	128.5477	30.491
3	9	350	350	400	400	72.3081	22.651
2	6	350	350	400	400	32.1369	14.53
1	3	350	350	400	400	8.0342	6.425
0	0	350	350	400	400	0	0
8	24	350	350	400	350	469.5178	51.929
7	21	350	350	400	350	380.097	48.984
6	18	350	350	400	350	279.2549	44.125
5	15	350	350	400	350	193.927	37.825
4	12	350	350	400	350	124.1133	30.543
3	9	350	350	400	350	69.8137	22.664
2	6	350	350	400	350	31.0283	14.497
1	3	350	350	400	350	7.7571	6.355
0	0	350	350	400	350	0	0
8	24	350	350	350	350	439.9043	53.751
7	21	350	350	350	350	356.7603	50.717
6	18	350	350	350	350	262.1096	45.69
5	15	350	350	350	350	182.0206	39.148
4	12	350	350	350	350	116.4932	31.569
3	9	350	350	350	350	65.5274	23.353
2	6	350	350	350	350	29.1233	14.829
1	3	350	350	350	350	7.2808	6.358
0	0	350	350	350	350	0	0
8	24	550	500	500	450	931.113	32.503

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
7	21	550	500	500	450	788.9645	30.539
6	18	550	500	500	450	579.6474	27.411
5	15	550	500	500	450	402.5329	23.36
4	12	550	500	500	450	257.6211	18.674
3	9	550	500	500	450	144.9118	13.607
2	6	550	500	500	450	64.4053	8.384
1	3	550	500	500	450	16.1013	3.339
0	0	550	500	500	450	0	0
8	24	550	500	500	400	887.9549	32.905
7	21	550	500	500	400	755.1017	30.922
6	18	550	500	500	400	554.7686	27.759
5	15	550	500	500	400	385.256	23.652
4	12	550	500	500	400	246.5638	18.893
3	9	550	500	500	400	138.6921	13.742
2	6	550	500	500	400	61.641	8.432
1	3	550	500	500	400	15.4102	3.321
0	0	550	500	500	400	0	0
8	24	550	500	500	350	841.6407	33.48
7	21	550	500	500	350	718.4811	31.465
6	18	550	500	500	350	527.8637	28.249
5	15	550	500	500	350	366.572	24.063
4	12	550	500	500	350	234.6061	19.205
3	9	550	500	500	350	131.9659	13.938
2	6	550	500	500	350	58.6515	8.509
1	3	550	500	500	350	14.6629	3.309
0	0	550	500	500	350	0	0
8	24	550	500	450	450	856.1296	34.29
7	21	550	500	450	450	727.7683	32.223
6	18	550	500	450	450	534.6869	28.927
5	15	550	500	450	450	371.3103	24.638
4	12	550	500	450	450	237.6386	19.66
3	9	550	500	450	450	133.6717	14.264
2	6	550	500	450	450	59.4097	8.701
1	3	550	500	450	450	14.8524	3.378
0	0	550	500	450	450	0	0
8	24	550	500	450	400	816.1594	34.826
7	21	550	500	450	400	696.1759	32.727
6	18	550	500	450	400	511.4762	29.38
5	15	550	500	450	400	355.1918	25.017
4	12	550	500	450	400	227.3227	19.945
3	9	550	500	450	400	127.869	14.441
2	6	550	500	450	400	56.8307	8.77
1	3	550	500	450	400	14.2077	3.368

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
0	0	550	500	450	400	0	0
8	24	550	500	450	350	773.512	35.548
7	21	550	500	450	350	662.2206	33.402
6	18	550	500	450	350	486.5294	29.986
5	15	550	500	450	350	337.8676	25.524
4	12	550	500	450	350	216.2353	20.327
3	9	550	500	450	350	121.6324	14.682
2	6	550	500	450	350	54.0588	8.869
1	3	550	500	450	350	13.5147	3.363
0	0	550	500	450	350	0	0
8	24	550	500	400	400	742.7401	37.232
7	21	550	500	400	400	635.6095	34.972
6	18	550	500	400	400	466.9784	31.388
5	15	550	500	400	400	324.2905	26.7
4	12	550	500	400	400	207.5459	21.233
3	9	550	500	400	400	116.7446	15.29
2	6	550	500	400	400	51.8865	9.176
1	3	550	500	400	400	12.9716	3.428
0	0	550	500	400	400	0	0
8	24	550	500	400	350	704.3139	38.109
7	21	550	500	400	350	604.8066	35.785
6	18	550	500	400	350	444.3477	32.112
5	15	550	500	400	350	308.5748	27.302
4	12	550	500	400	350	197.4879	21.684
3	9	550	500	400	350	111.0869	15.573
2	6	550	500	400	350	49.372	9.295
1	3	550	500	400	350	12.343	3.43
0	0	550	500	400	350	0	0
8	24	550	500	350	350	635.6739	41.241
7	21	550	500	350	350	547.6116	38.676
6	18	550	500	350	350	402.3269	34.675
5	15	550	500	350	350	279.3937	29.433
4	12	550	500	350	350	178.812	23.297
3	9	550	500	350	350	100.5817	16.618
2	6	550	500	350	350	44.703	9.786
1	3	550	500	350	350	11.1757	3.512
0	0	550	500	350	350	0	0
8	24	550	450	600	600	1158.243	30.799
7	21	550	450	600	600	958.5219	28.869
6	18	550	450	600	600	704.2201	25.867
5	15	550	450	600	600	489.0418	22.052
4	12	550	450	600	600	312.9867	17.695
3	9	550	450	600	600	176.055	13.027

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
2	6	550	450	600	600	78.2467	8.239
1	3	550	450	600	600	19.5617	3.539
0	0	550	450	600	600	0	0
8	24	550	450	600	550	1119.6971	30.714
7	21	550	450	600	550	929.2582	28.797
6	18	550	450	600	550	682.7203	25.808
5	15	550	450	600	550	474.1113	22.002
4	12	550	450	600	550	303.4312	17.651
3	9	550	450	600	550	170.6801	12.985
2	6	550	450	600	550	75.8578	8.195
1	3	550	450	600	550	18.9645	3.497
0	0	550	450	600	550	0	0
8	24	550	450	600	500	1079.2513	30.676
7	21	550	450	600	500	898.4326	28.772
6	18	550	450	600	500	660.0729	25.791
5	15	550	450	600	500	458.384	21.988
4	12	550	450	600	500	293.3657	17.634
3	9	550	450	600	500	165.0182	12.961
2	6	550	450	600	500	73.3414	8.16
1	3	550	450	600	500	18.3354	3.456
0	0	550	450	600	500	0	0
8	24	550	450	600	450	1036.4995	30.705
7	21	550	450	600	450	865.6925	28.809
6	18	550	450	600	450	636.0189	25.83
5	15	550	450	600	450	441.6798	22.022
4	12	550	450	600	450	282.6751	17.655
3	9	550	450	600	450	159.0047	12.962
2	6	550	450	600	450	70.6688	8.138
1	3	550	450	600	450	17.6672	3.418
0	0	550	450	600	450	0	0
8	24	550	450	550	550	1052.9729	31.549
7	21	550	450	550	550	876.3259	29.6
6	18	550	450	550	550	643.8313	26.54
5	15	550	450	550	550	447.1051	22.625
4	12	550	450	550	550	286.1472	18.136
3	9	550	450	550	550	160.9578	13.309
2	6	550	450	550	550	71.5368	8.348
1	3	550	450	550	550	17.8842	3.495
0	0	550	450	550	500	0	0
8	24	550	450	550	500	1014.2236	31.597
7	21	550	450	550	500	846.607	29.655
6	18	550	450	550	500	621.997	26.594
5	15	550	450	550	500	431.9423	22.671

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
4	12	550	450	550	500	276.4431	18.166
3	9	550	450	550	500	155.4992	13.318
2	6	550	450	550	500	69.1108	8.331
1	3	550	450	550	500	17.2777	3.461
0	0	550	450	550	500	0	0
8	24	550	450	550	450	973.298	31.723
7	21	550	450	550	450	815.0615	29.781
6	18	550	450	550	450	598.8207	26.714
5	15	550	450	550	450	415.8477	22.772
4	12	550	450	550	450	266.1425	18.239
3	9	550	450	550	450	149.7052	13.355
2	6	550	450	550	450	66.5356	8.329
1	3	550	450	550	450	16.6339	3.429
0	0	550	450	550	450	0	0
8	24	550	450	550	400	929.6765	31.954
7	21	550	450	550	400	781.2335	30.008
6	18	550	450	550	400	573.9675	26.923
5	15	550	450	550	400	398.5885	22.949
4	12	550	450	550	400	255.0967	18.37
3	9	550	450	550	400	143.4919	13.432
2	6	550	450	550	400	63.7742	8.346
1	3	550	450	550	400	15.9435	3.4
0	0	550	450	550	400	0	0
8	24	550	450	500	500	944.6565	32.813
7	21	550	450	500	500	790.8375	30.813
6	18	550	450	500	500	581.0235	27.644
5	15	550	450	500	500	403.4885	23.561
4	12	550	450	500	500	258.2326	18.857
3	9	550	450	500	500	145.2559	13.782
2	6	550	450	500	500	64.5582	8.555
1	3	550	450	500	500	16.1395	3.476
0	0	550	450	500	500	0	0
8	24	550	450	500	450	905.888	33.047
7	21	550	450	500	450	760.749	31.04
6	18	550	450	500	450	558.9176	27.852
5	15	550	450	500	450	388.1372	23.737
4	12	550	450	500	450	248.4078	18.987
3	9	550	450	500	450	139.7294	13.858
2	6	550	450	500	450	62.102	8.573
1	3	550	450	500	450	15.5255	3.451
0	0	550	450	500	450	0	0
8	24	550	450	500	400	864.6746	33.4
7	21	550	450	500	400	728.5696	31.378

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
6	18	550	450	500	400	535.2756	28.161
5	15	550	450	500	400	371.7192	23.996
4	12	550	450	500	400	237.9003	19.182
3	9	550	450	500	400	133.8189	13.977
2	6	550	450	500	400	59.4751	8.612
1	3	550	450	500	400	14.8688	3.429
0	0	550	450	500	400	0	0
8	24	550	450	500	350	820.3919	33.921
7	21	550	450	500	350	693.7454	31.873
6	18	550	450	500	350	509.6905	28.609
5	15	550	450	500	350	353.9517	24.373
4	12	550	450	500	350	226.5291	19.467
3	9	550	450	500	350	127.4226	14.155
2	6	550	450	500	350	56.6323	8.68
1	3	550	450	500	350	14.1581	3.414
0	0	550	450	500	350	0	0
8	24	550	450	450	450	834.8732	34.753
7	21	550	450	450	450	703.2164	32.651
6	18	550	450	450	450	516.6488	29.305
5	15	550	450	450	450	358.7839	24.964
4	12	550	450	450	450	229.6217	19.935
3	9	550	450	450	450	129.1622	14.491
2	6	550	450	450	450	57.4054	8.879
1	3	550	450	450	450	14.3514	3.486
0	0	550	450	450	450	0	0
8	24	550	450	450	400	796.5278	35.241
7	21	550	450	450	400	673.067	33.112
6	18	550	450	450	400	494.4982	29.721
5	15	550	450	450	400	343.4015	25.312
4	12	550	450	450	400	219.777	20.197
3	9	550	450	450	400	123.6246	14.654
2	6	550	450	450	400	54.9442	8.94
1	3	550	450	450	400	13.7361	3.472
0	0	550	450	450	400	0	0
8	24	550	450	450	350	755.5541	35.911
7	21	550	450	450	350	640.6314	33.741
6	18	550	450	450	350	470.668	30.287
5	15	550	450	450	350	326.8528	25.786
4	12	550	450	450	350	209.1858	20.555
3	9	550	450	450	350	117.667	14.879
2	6	550	450	450	350	52.2964	9.032
1	3	550	450	450	350	13.0741	3.464
0	0	550	450	450	350	0	0

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
8	24	550	450	400	400	726.3765	37.561
7	21	550	450	400	400	615.6507	35.283
6	18	550	450	400	400	452.3148	31.666
5	15	550	450	400	400	314.1075	26.946
4	12	550	450	400	400	201.0288	21.45
3	9	550	450	400	400	113.0787	15.482
2	6	550	450	400	400	50.2572	9.339
1	3	550	450	400	400	12.5643	3.529
0	0	550	450	400	400	0	0
8	24	550	450	400	350	689.2679	38.388
7	21	550	450	400	350	586.0831	36.053
6	18	550	450	400	350	430.5917	32.353
5	15	550	450	400	350	299.022	27.518
4	12	550	450	400	350	191.3741	21.88
3	9	550	450	400	350	107.6479	15.753
2	6	550	450	400	350	47.8435	9.451
1	3	550	450	400	350	11.9609	3.528
0	0	550	450	400	350	0	0
8	24	550	450	350	350	623.0866	41.431
7	21	550	450	350	350	531.3958	38.87
6	18	550	450	350	350	390.4132	34.858
5	15	550	450	350	350	271.1203	29.605
4	12	550	450	350	350	173.517	23.465
3	9	550	450	350	350	97.6033	16.785
2	6	550	450	350	350	43.3792	9.939
1	3	550	450	350	350	10.8448	3.607
0	0	550	450	350	350	0	0
8	24	550	400	600	600	1113.3428	31.798
7	21	550	400	600	600	914.0625	29.789
6	18	550	400	600	600	671.5561	26.68
5	15	550	400	600	600	466.3584	22.743
4	12	550	400	600	600	298.4694	18.255
3	9	550	400	600	600	167.889	13.453
2	6	550	400	600	600	74.6173	8.534
1	3	550	400	600	600	18.6543	3.7
0	0	550	400	600	600	0	0
8	24	550	400	600	550	1077.1095	31.667
7	21	550	400	600	550	886.6124	29.675
6	18	550	400	600	550	651.3887	26.583
5	15	550	400	600	550	452.3533	22.661
4	12	550	400	600	550	289.5061	18.186
3	9	550	400	600	550	162.8472	13.393
2	6	550	400	600	550	72.3765	8.479

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
1	3	550	400	600	550	18.0941	3.653
0	0	550	400	600	550	0	0
8	24	550	400	600	500	1039.0912	31.581
7	21	550	400	600	500	857.7121	29.605
6	18	550	400	600	500	630.1558	26.526
5	15	550	400	600	500	437.6082	22.613
4	12	550	400	600	500	280.0693	18.142
3	9	550	400	600	500	157.539	13.35
2	6	550	400	600	500	70.0173	8.433
1	3	550	400	600	500	17.5043	3.607
0	0	550	400	600	500	0	0
8	24	550	400	600	450	998.9034	31.559
7	21	550	400	600	450	827.0329	29.594
6	18	550	400	600	450	607.616	26.523
5	15	550	400	600	450	421.9556	22.611
4	12	550	400	600	450	270.0516	18.135
3	9	550	400	600	450	151.904	13.331
2	6	550	400	600	450	67.5129	8.399
1	3	550	400	600	450	16.8782	3.564
0	0	550	400	600	450	0	0
8	24	550	400	550	550	1015.4258	32.427
7	21	550	400	550	550	837.9755	30.408
6	18	550	400	550	550	615.6555	27.253
5	15	550	400	550	550	427.5385	23.232
4	12	550	400	550	550	273.6246	18.629
3	9	550	400	550	550	153.9139	13.69
2	6	550	400	550	550	68.4062	8.617
1	3	550	400	550	550	17.1015	3.646
0	0	550	400	550	500	0	0
8	24	550	400	550	500	978.9136	32.428
7	21	550	400	550	500	810.0612	30.418
6	18	550	400	550	500	595.147	27.268
5	15	550	400	550	500	413.2965	23.245
4	12	550	400	550	500	264.5098	18.634
3	9	550	400	550	500	148.7868	13.68
2	6	550	400	550	500	66.1274	8.589
1	3	550	400	550	500	16.5319	3.607
0	0	550	400	550	500	0	0
8	24	550	400	550	450	940.3348	32.502
7	21	550	400	550	450	780.4349	30.498
6	18	550	400	550	450	573.3808	27.346
5	15	550	400	550	450	398.1811	23.31
4	12	550	400	550	450	254.8359	18.679

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
3	9	550	400	550	450	143.3452	13.697
2	6	550	400	550	450	63.709	8.575
1	3	550	400	550	450	15.9272	3.57
0	0	550	400	550	450	0	0
8	24	550	400	550	400	899.1904	32.678
7	21	550	400	550	400	748.6652	30.673
6	18	550	400	550	400	550.0397	27.51
5	15	550	400	550	400	381.972	23.449
4	12	550	400	550	400	244.4621	18.781
3	9	550	400	550	400	137.5099	13.753
2	6	550	400	550	400	61.1155	8.58
1	3	550	400	550	400	15.2789	3.536
0	0	550	400	550	400	0	0
8	24	550	400	500	500	914.2092	33.56
7	21	550	400	500	500	758.5415	31.5
6	18	550	400	500	500	557.2958	28.25
5	15	550	400	500	500	387.011	24.079
4	12	550	400	500	500	247.687	19.282
3	9	550	400	500	500	139.3239	14.115
2	6	550	400	500	500	61.9218	8.798
1	3	550	400	500	500	15.4804	3.616
0	0	550	400	500	500	0	0
8	24	550	400	500	450	877.526	33.744
7	21	550	400	500	450	730.1913	31.681
6	18	550	400	500	450	536.4671	28.418
5	15	550	400	500	450	372.5466	24.22
4	12	550	400	500	450	238.4298	19.385
3	9	550	400	500	450	134.1168	14.173
2	6	550	400	500	450	59.6075	8.805
1	3	550	400	500	450	14.9019	3.586
0	0	550	400	500	450	0	0
8	24	550	400	500	400	838.4909	34.042
7	21	550	400	500	400	699.8577	31.969
6	18	550	400	500	400	514.1811	28.682
5	15	550	400	500	400	357.0702	24.442
4	12	550	400	500	400	228.525	19.552
3	9	550	400	500	400	128.5453	14.272
2	6	550	400	500	400	57.1312	8.833
1	3	550	400	500	400	14.2828	3.56
0	0	550	400	500	400	0	0
8	24	550	400	500	350	796.4946	34.503
7	21	550	400	500	350	667.0084	32.409
6	18	550	400	500	350	490.047	29.082

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
5	15	550	400	500	350	340.3104	24.779
4	12	550	400	500	350	217.7987	19.806
3	9	550	400	500	350	122.5118	14.431
2	6	550	400	500	350	54.4497	8.891
1	3	550	400	500	350	13.6124	3.54
0	0	550	400	500	350	0	0
8	24	550	400	450	450	810.9235	35.359
7	21	550	400	450	450	676.6334	33.21
6	18	550	400	450	450	497.1184	29.799
5	15	550	400	450	450	345.2211	25.388
4	12	550	400	450	450	220.9415	20.289
3	9	550	400	450	450	124.2796	14.778
2	6	550	400	450	450	55.2354	9.099
1	3	550	400	450	450	13.8088	3.616
0	0	550	400	450	450	0	0
8	24	550	400	450	400	774.4223	35.794
7	21	550	400	450	400	648.0823	33.623
6	18	550	400	450	400	476.1421	30.173
5	15	550	400	450	400	330.6542	25.702
4	12	550	400	450	400	211.6187	20.525
3	9	550	400	450	400	119.0355	14.924
2	6	550	400	450	400	52.9047	9.15
1	3	550	400	450	400	13.2262	3.598
0	0	550	400	450	400	0	0
8	24	550	400	450	350	735.357	36.405
7	21	550	400	450	350	617.3339	34.2
6	18	550	400	450	350	453.5514	30.693
5	15	550	400	450	350	314.9663	26.138
4	12	550	400	450	350	201.5784	20.855
3	9	550	400	450	350	113.3879	15.131
2	6	550	400	450	350	50.3946	9.232
1	3	550	400	450	350	12.5987	3.586
0	0	550	400	450	350	0	0
8	24	550	400	400	400	707.975	38.016
7	21	550	400	400	400	594.1318	35.709
6	18	550	400	400	400	436.505	32.046
5	15	550	400	400	400	303.1285	27.277
4	12	550	400	400	400	194.0022	21.737
3	9	550	400	400	400	109.1263	15.728
2	6	550	400	400	400	48.5006	9.539
1	3	550	400	400	400	12.1251	3.651
0	0	550	400	400	400	0	0
8	24	550	400	400	350	672.3885	38.788

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
7	21	550	400	400	350	565.9479	36.43
6	18	550	400	400	350	415.7985	32.691
5	15	550	400	400	350	288.7489	27.816
4	12	550	400	400	350	184.7993	22.143
3	9	550	400	400	350	103.9496	15.984
2	6	550	400	400	350	46.1998	9.644
1	3	550	400	400	350	11.55	3.647
0	0	550	400	400	350	0	0
8	24	550	400	350	350	609.0435	41.731
7	21	550	400	350	350	514.0496	39.164
6	18	550	400	350	350	377.6691	35.128
5	15	550	400	350	350	262.2702	29.852
4	12	550	400	350	350	167.8529	23.694
3	9	550	400	350	350	94.4173	17
2	6	550	400	350	350	41.9632	10.127
1	3	550	400	350	350	10.4908	3.723
0	0	550	400	350	350	0	0
8	24	500	500	600	600	1104.2238	32.202
7	21	500	500	600	600	914.4519	30.227
6	18	500	500	600	600	671.8422	27.117
5	15	500	500	600	600	466.5571	23.154
4	12	500	500	600	600	298.5965	18.619
3	9	500	500	600	600	167.9606	13.752
2	6	500	500	600	600	74.6491	8.751
1	3	500	500	600	600	18.6623	3.817
0	0	500	500	600	600	0	0
8	24	500	500	600	550	1068.744	32.076
7	21	500	500	600	550	887.6065	30.117
6	18	500	500	600	550	652.119	27.024
5	15	500	500	600	550	452.8604	23.075
4	12	500	500	600	550	289.8307	18.55
3	9	500	500	600	550	163.0298	13.691
2	6	500	500	600	550	72.4577	8.696
1	3	500	500	600	550	18.1144	3.769
0	0	500	500	600	550	0	0
8	24	500	500	600	500	1031.5057	31.997
7	21	500	500	600	500	859.3213	30.052
6	18	500	500	600	500	631.3381	26.971
5	15	500	500	600	500	438.4292	23.029
4	12	500	500	600	500	280.5947	18.508
3	9	500	500	600	500	157.8345	13.649
2	6	500	500	600	500	70.1487	8.649
1	3	500	500	600	500	17.5372	3.723

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
0	0	500	500	600	500	0	0
8	24	500	500	600	450	992.1273	31.983
7	21	500	500	600	450	829.2658	30.048
6	18	500	500	600	450	609.2565	26.973
5	15	500	500	600	450	423.0948	23.03
4	12	500	500	600	450	270.7807	18.503
3	9	500	500	600	450	152.3141	13.631
2	6	500	500	600	450	67.6952	8.616
1	3	500	500	600	450	16.9238	3.678
0	0	500	500	600	450	0	0
8	24	500	500	550	550	1008.3701	32.845
7	21	500	500	550	550	839.8246	30.857
6	18	500	500	550	550	617.014	27.699
5	15	500	500	550	550	428.4819	23.648
4	12	500	500	550	550	274.2284	18.996
3	9	500	500	550	550	154.2535	13.989
2	6	500	500	550	550	68.5571	8.834
1	3	500	500	550	550	17.1393	3.761
0	0	500	500	550	500	0	0
8	24	500	500	550	500	972.5679	32.854
7	21	500	500	550	500	812.4526	30.874
6	18	500	500	550	500	596.904	27.719
5	15	500	500	550	500	414.5167	23.665
4	12	500	500	550	500	265.2907	19.003
3	9	500	500	550	500	149.226	13.981
2	6	500	500	550	500	66.3227	8.806
1	3	500	500	550	500	16.5807	3.721
0	0	500	500	550	500	0	0
8	24	500	500	550	450	934.7201	32.937
7	21	500	500	550	450	783.3693	30.961
6	18	500	500	550	450	575.5366	27.803
5	15	500	500	550	450	399.6782	23.735
4	12	500	500	550	450	255.7941	19.051
3	9	500	500	550	450	143.8842	14
2	6	500	500	550	450	63.9485	8.793
1	3	500	500	550	450	15.9871	3.683
0	0	500	500	550	450	0	0
8	24	500	500	550	400	894.3287	33.123
7	21	500	500	550	400	752.1381	31.145
6	18	500	500	550	400	552.5913	27.974
5	15	500	500	550	400	383.7439	23.88
4	12	500	500	550	400	245.5961	19.157
3	9	500	500	550	400	138.1478	14.059

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
2	6	500	500	550	400	61.399	8.799
1	3	500	500	550	400	15.3498	3.649
0	0	500	500	550	400	0	0
8	24	500	500	500	500	909.0839	33.999
7	21	500	500	500	500	761.6522	31.967
6	18	500	500	500	500	559.5812	28.711
5	15	500	500	500	500	388.5981	24.506
4	12	500	500	500	500	248.7028	19.656
3	9	500	500	500	500	139.8953	14.42
2	6	500	500	500	500	62.1757	9.017
1	3	500	500	500	500	15.5439	3.73
0	0	500	500	500	500	0	0
8	24	500	500	500	450	873.041	34.193
7	21	500	500	500	450	733.7546	32.157
6	18	500	500	500	450	539.085	28.886
5	15	500	500	500	450	374.3646	24.653
4	12	500	500	500	450	239.5934	19.764
3	9	500	500	500	450	134.7713	14.48
2	6	500	500	500	450	59.8983	9.026
1	3	500	500	500	450	14.9746	3.7
0	0	500	500	500	450	0	0
8	24	500	500	500	400	834.657	34.504
7	21	500	500	500	400	703.86	32.456
6	18	500	500	500	400	517.1216	29.159
5	15	500	500	500	400	359.1122	24.883
4	12	500	500	500	400	229.8318	19.936
3	9	500	500	500	400	129.2804	14.583
2	6	500	500	500	400	57.458	9.056
1	3	500	500	500	400	14.3645	3.673
0	0	500	500	500	400	0	0
8	24	500	500	500	350	793.3203	34.979
7	21	500	500	500	350	671.4265	32.91
6	18	500	500	500	350	493.2929	29.571
5	15	500	500	500	350	342.5645	25.23
4	12	500	500	500	350	219.2413	20.198
3	9	500	500	500	350	123.3232	14.747
2	6	500	500	500	350	54.8103	9.116
1	3	500	500	500	350	13.7026	3.653
0	0	500	500	500	350	0	0
8	24	500	500	450	450	807.4939	35.827
7	21	500	500	450	450	680.717	33.704
6	18	500	500	450	450	500.1186	30.283
5	15	500	500	450	450	347.3046	25.834

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
4	12	500	500	450	450	222.2749	20.678
3	9	500	500	450	450	125.0296	15.093
2	6	500	500	450	450	55.5687	9.324
1	3	500	500	450	450	13.8922	3.73
0	0	500	500	450	450	0	0
8	24	500	500	450	400	771.5324	36.277
7	21	500	500	450	400	652.4998	34.131
6	18	500	500	450	400	479.3876	30.669
5	15	500	500	450	400	332.9081	26.158
4	12	500	500	450	400	213.0612	20.922
3	9	500	500	450	400	119.8469	15.244
2	6	500	500	450	400	53.2653	9.379
1	3	500	500	450	400	13.3163	3.712
0	0	500	500	450	400	0	0
8	24	500	500	450	350	733.0039	36.906
7	21	500	500	450	350	622.0543	34.724
6	18	500	500	450	350	457.0195	31.204
5	15	500	500	450	350	317.3746	26.607
4	12	500	500	450	350	203.1198	21.261
3	9	500	500	450	350	114.2549	15.458
2	6	500	500	450	350	50.7799	9.464
1	3	500	500	450	350	12.695	3.699
0	0	500	500	450	350	0	0
8	24	500	500	400	400	705.9055	38.529
7	21	500	500	400	400	598.8213	36.246
6	18	500	500	400	400	439.9503	32.568
5	15	500	500	400	400	305.5211	27.756
4	12	500	500	400	400	195.5335	22.152
3	9	500	500	400	400	109.9876	16.063
2	6	500	500	400	400	48.8834	9.775
1	3	500	500	400	400	12.2208	3.765
0	0	500	500	400	400	0	0
8	24	500	500	400	350	670.7321	39.321
7	21	500	500	400	350	570.8318	36.986
6	18	500	500	400	350	419.3866	33.231
5	15	500	500	400	350	291.2407	28.31
4	12	500	500	400	350	186.394	22.57
3	9	500	500	400	350	104.8467	16.327
2	6	500	500	400	350	46.5985	9.885
1	3	500	500	400	350	11.6496	3.762
0	0	500	500	400	350	0	0
8	24	500	500	350	350	607.9364	42.309
7	21	500	500	350	350	518.9491	39.764

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
6	18	500	500	350	350	381.2687	35.709
5	15	500	500	350	350	264.77	30.382
4	12	500	500	350	350	169.4528	24.152
3	9	500	500	350	350	95.3172	17.366
2	6	500	500	350	350	42.3632	10.382
1	3	500	500	350	350	10.5908	3.84
0	0	500	500	350	350	0	0
8	24	500	450	600	600	1064.435	33.182
7	21	500	450	600	600	875.1497	31.133
6	18	500	450	600	600	642.9671	27.922
5	15	500	450	600	600	446.5049	23.839
4	12	500	450	600	600	285.7632	19.175
3	9	500	450	600	600	160.7418	14.175
2	6	500	450	600	600	71.4408	9.043
1	3	500	450	600	600	17.8602	3.975
0	0	500	450	600	600	0	0
8	24	500	450	600	550	1030.894	33.014
7	21	500	450	600	550	849.8147	30.984
6	18	500	450	600	550	624.3537	27.793
5	15	500	450	600	550	433.5789	23.729
4	12	500	450	600	550	277.4905	19.082
3	9	500	450	600	550	156.0884	14.097
2	6	500	450	600	550	69.3726	8.976
1	3	500	450	600	550	17.3432	3.923
0	0	500	450	600	550	0	0
8	24	500	450	600	500	995.6989	32.89
7	21	500	450	600	500	823.1399	30.876
6	18	500	450	600	500	604.7558	27.702
5	15	500	450	600	500	419.9693	23.652
4	12	500	450	600	500	268.7804	19.015
3	9	500	450	600	500	151.189	14.036
2	6	500	450	600	500	67.1951	8.919
1	3	500	450	600	500	16.7988	3.872
0	0	500	450	600	500	0	0
8	24	500	450	600	450	958.489	32.827
7	21	500	450	600	450	794.8169	30.826
6	18	500	450	600	450	583.9471	27.663
5	15	500	450	600	450	405.5188	23.618
4	12	500	450	600	450	259.532	18.982
3	9	500	450	600	450	145.9868	13.999
2	6	500	450	600	450	64.883	8.873
1	3	500	450	600	450	16.2208	3.822
0	0	500	450	600	450	0	0

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
8	24	500	450	550	550	974.7422	33.713
7	21	500	450	550	550	805.6174	31.659
6	18	500	450	550	550	591.8821	28.409
5	15	500	450	550	550	411.0293	24.254
4	12	500	450	550	550	263.0587	19.49
3	9	500	450	550	550	147.9705	14.368
2	6	500	450	550	550	65.7647	9.1
1	3	500	450	550	550	16.4412	3.909
0	0	500	450	550	500	0	0
8	24	500	450	550	500	940.8479	33.677
7	21	500	450	550	500	779.7756	31.634
6	18	500	450	550	500	572.8963	28.392
5	15	500	450	550	500	397.8447	24.239
4	12	500	450	550	500	254.6206	19.471
3	9	500	450	550	500	143.2241	14.342
2	6	500	450	550	500	63.6551	9.062
1	3	500	450	550	500	15.9138	3.864
0	0	500	450	550	500	0	0
8	24	500	450	550	450	905.0126	33.712
7	21	500	450	550	450	752.3288	31.676
6	18	500	450	550	450	552.7313	28.436
5	15	500	450	550	450	383.8412	24.275
4	12	500	450	550	450	245.6584	19.493
3	9	500	450	550	450	138.1828	14.343
2	6	500	450	550	450	61.4146	9.037
1	3	500	450	550	450	15.3536	3.822
0	0	500	450	550	450	0	0
8	24	500	450	550	400	866.7591	33.846
7	21	500	450	550	400	722.8644	31.812
6	18	500	450	550	400	531.0841	28.564
5	15	500	450	550	400	368.8084	24.383
4	12	500	450	550	400	236.0374	19.57
3	9	500	450	550	400	132.771	14.381
2	6	500	450	550	400	59.0093	9.032
1	3	500	450	550	400	14.7523	3.783
0	0	500	450	550	400	0	0
8	24	500	450	500	500	881.5306	34.745
7	21	500	450	500	500	732.6017	32.655
6	18	500	450	500	500	538.238	29.32
5	15	500	450	500	500	373.7764	25.027
4	12	500	450	500	500	239.2169	20.083
3	9	500	450	500	500	134.5595	14.753
2	6	500	450	500	500	59.8042	9.257

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
1	3	500	450	500	500	14.9511	3.868
0	0	500	450	500	500	0	0
8	24	500	450	500	450	847.3046	34.891
7	21	500	450	500	450	706.2107	32.801
6	18	500	450	500	450	518.8487	29.456
5	15	500	450	500	450	360.3116	25.141
4	12	500	450	500	450	230.5994	20.165
3	9	500	450	500	450	129.7122	14.795
2	6	500	450	500	450	57.6499	9.256
1	3	500	450	500	450	14.4125	3.833
0	0	500	450	500	450	0	0
8	24	500	450	500	400	810.8318	35.15
7	21	500	450	500	400	677.9269	33.052
6	18	500	450	500	400	498.0687	29.687
5	15	500	450	500	400	345.881	25.335
4	12	500	450	500	400	221.3639	20.31
3	9	500	450	500	400	124.5172	14.88
2	6	500	450	500	400	55.341	9.275
1	3	500	450	500	400	13.8352	3.802
0	0	500	450	500	400	0	0
8	24	500	450	500	350	771.5174	35.568
7	21	500	450	500	350	647.2304	33.454
6	18	500	450	500	350	475.5162	30.053
5	15	500	450	500	350	330.2196	25.643
4	12	500	450	500	350	211.3405	20.542
3	9	500	450	500	350	118.8791	15.023
2	6	500	450	500	350	52.8351	9.324
1	3	500	450	500	350	13.2088	3.777
0	0	500	450	500	350	0	0
8	24	500	450	450	450	785.6383	36.441
7	21	500	450	450	450	656.6508	34.271
6	18	500	450	450	450	482.4373	30.785
5	15	500	450	450	450	335.0259	26.265
4	12	500	450	450	450	214.4166	21.037
3	9	500	450	450	450	120.6093	15.381
2	6	500	450	450	450	53.6041	9.54
1	3	500	450	450	450	13.401	3.858
0	0	500	450	450	450	0	0
8	24	500	450	450	400	751.3238	36.839
7	21	500	450	450	400	629.853	34.651
6	18	500	450	450	400	462.7492	31.13
5	15	500	450	450	400	321.3536	26.555
4	12	500	450	450	400	205.6663	21.254

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
3	9	500	450	450	400	115.6873	15.514
2	6	500	450	450	400	51.4166	9.585
1	3	500	450	450	400	12.8541	3.835
0	0	500	450	450	400	0	0
8	24	500	450	450	350	714.5132	37.412
7	21	500	450	450	350	600.917	35.194
6	18	500	450	450	350	441.4901	31.621
5	15	500	450	450	350	306.5903	26.967
4	12	500	450	450	350	196.2178	21.566
3	9	500	450	450	350	110.3725	15.71
2	6	500	450	450	350	49.0545	9.661
1	3	500	450	450	350	12.2636	3.819
0	0	500	450	450	350	0	0
8	24	500	450	400	400	689.046	39
7	21	500	450	400	400	579.2859	36.684
6	18	500	450	400	400	425.5978	32.958
5	15	500	450	400	400	295.554	28.096
4	12	500	450	400	400	189.1546	22.443
3	9	500	450	400	400	106.3994	16.307
2	6	500	450	400	400	47.2886	9.97
1	3	500	450	400	400	11.8222	3.884
0	0	500	450	400	400	0	0
8	24	500	450	400	350	655.2672	39.738
7	21	500	450	400	350	552.555	37.377
6	18	500	450	400	350	405.9588	33.58
5	15	500	450	400	350	281.9158	28.616
4	12	500	450	400	350	180.4261	22.836
3	9	500	450	400	350	101.4897	16.555
2	6	500	450	400	350	45.1065	10.072
1	3	500	450	400	350	11.2766	3.877
0	0	500	450	400	350	0	0
8	24	500	450	350	350	595.1056	42.63
7	21	500	450	350	350	503.2352	40.074
6	18	500	450	350	350	369.7238	35.989
5	15	500	450	350	350	256.7527	30.634
4	12	500	450	350	350	164.3217	24.38
3	9	500	450	350	350	92.431	17.574
2	6	500	450	350	350	41.0804	10.562
1	3	500	450	350	350	10.2701	3.952
0	0	500	450	350	350	0	0
8	24	500	400	600	600	1020.4935	34.377
7	21	500	400	600	600	832.8709	32.239
6	18	500	400	600	600	611.9052	28.904

Story	Elevation	column		beam		X-Dir	displacement
	m	mm	mm	mm	mm	kN	mm
5	15	500	400	600	600	424.9341	24.677
4	12	500	400	600	600	271.9578	19.854
3	9	500	400	600	600	152.9763	14.691
2	6	500	400	600	600	67.9895	9.395
1	3	500	400	600	600	16.9974	4.165
0	0	500	400	600	600	0	0
8	24	500	400	600	550	989.0337	34.161
7	21	500	400	600	550	809.1408	32.045
6	18	500	400	600	550	594.4708	28.735
5	15	500	400	600	550	412.827	24.532
4	12	500	400	600	550	264.2092	19.734
3	9	500	400	600	550	148.6177	14.593
2	6	500	400	600	550	66.0523	9.317
1	3	500	400	600	550	16.5131	4.107
0	0	500	400	600	550	0	0
8	24	500	400	600	500	956.0358	33.986
7	21	500	400	600	500	784.1779	31.889
6	18	500	400	600	500	576.1307	28.6
5	15	500	400	600	500	400.0908	24.418
4	12	500	400	600	500	256.0581	19.637
3	9	500	400	600	500	144.0327	14.51
2	6	500	400	600	500	64.0145	9.246
1	3	500	400	600	500	16.0036	4.05
0	0	500	400	600	500	0	0
8	24	500	400	600	450	921.1628	33.867
7	21	500	400	600	450	757.6981	31.788
6	18	500	400	600	450	556.6762	28.515
5	15	500	400	600	450	386.5807	24.345
4	12	500	400	600	450	247.4116	19.573
3	9	500	400	600	450	139.169	14.451
2	6	500	400	600	450	61.8529	9.187
1	3	500	400	600	450	15.4632	3.995
0	0	500	400	600	450	0	0

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