NOMENCLATURE

$L$ length of brick
$B$ width of brick
$D$ thickness of brick
$B_1$ least lateral dimension of masonry prism
$B_2$ other lateral dimension of masonry prism
$C_f$ correction factor
$h$ height of masonry prism
$r$ minimum radius of gyration
$h/r$ slenderness ratio
$r'$ sum of ratio of mortar mix
$\tau$ shear strength of brick masonry
$\sigma$ compressive stress
$\sigma_b$ compressive strength of brick
$\sigma_m$ compressive strength of mortar
$\sigma_{bm}$ compressive strength of brick masonry
$\varepsilon$ compressive strain
$a, b$ model parameters
$\alpha, \beta$ constants
$K$ coefficient which depends on layout of bricks and joints
$K_s$ spring constant
$K_c$ coefficient for compressive strength of brick masonry
$K_{ss}$ coefficient for shear strength of brick masonry
$K_r$ coefficient for radius of gyration
$K_1, K_2$ coefficients which depend on the type of mortar
$s_b$: standard deviation for the strength of brick  
$s_m$: standard deviation for the strength of mortar  
$s_{bm}$: standard deviation for the strength of brick masonry  
$\delta_b$: coefficient of variation for the strength of brick  
$\delta_m$: coefficient of variation for the strength of mortar  
$\delta_{bm}$: coefficient of variation for the strength of brick masonry  
$\delta_s$: shape factor to account for the shape and size of brick  
$\delta_{mf}$: moisture factor to account for the moisture content of brick masonry  
$P$: horizontal force applied at the top of wall to give unit lateral displacement  
$U$: strain energy  
$M_x$: bending moment at a section distant $x$ from base  
$M$: fixed end moment  
$F$: shear force  
$V$: support reaction  
$q$: shear stress intensity at a section  
$z$: width of the fibre at a distance $y$ from neutral axis  
$y$: distance of fibre under consideration from neutral axis  
$y_t$: distance of the fibre in tension zone under consideration from neutral axis  
$y_c$: distance of the fibre in compression zone under consideration from neutral axis  
$A_y$: moment of area of the portion which is between the fibre under consideration and the extreme of fibre  
$L_w$: length of wall  
$H$: height of wall  
$t_w$: thickness of wall  
$L_1$: width of door  
$H_1$: height of door  
$L_2$: width of ventilator  
$H_2$: height of ventilator  
$L_3$: width of window
$H_3$ \hspace{0.5cm} \text{height of window} \\
$I$ \hspace{0.5cm} \text{second moment of area of wall about neutral axis} \\
$I_1$ \hspace{0.5cm} \text{second moment of area of wall for the portion having door opening about neutral axis} \\
$I_2$ \hspace{0.5cm} \text{second moment of area of wall for the portion having ventilator opening about neutral axis} \\
$I_3$ \hspace{0.5cm} \text{second moment of area of wall for the solid portion without opening about neutral axis} \\
$I_4$ \hspace{0.5cm} \text{second moment of area of wall for the portion having window opening about neutral axis} \\
$E$ \hspace{0.5cm} \text{modulus of elasticity of brick masonry} \\
$G$ \hspace{0.5cm} \text{shear modulus of brick masonry} \\
$M_t$ \hspace{0.5cm} \text{mass lumped at roof level} \\
$M_b$ \hspace{0.5cm} \text{mass lumped at base} \\
$M_T$ \hspace{0.5cm} \text{sum of top and bottom mass i.e. total mass} \\
$\ddot{X}_t$, $\ddot{Z}_t$ \hspace{0.5cm} \text{absolute and relative accelerations of the top mass respectively} \\
$\ddot{X}_b$, $\ddot{Z}_b$ \hspace{0.5cm} \text{absolute and relative accelerations of bottom mass respectively} \\
$\ddot{y}(t)$ \hspace{0.5cm} \text{ground acceleration at any instant of time, } t \\
$Z_b, Z_t$ \hspace{0.5cm} \text{lateral relative displacements of bottom and top masses respectively} \\
$\dot{Z}_t, \dot{Z}_b$ \hspace{0.5cm} \text{relative velocities of bottom and top masses respectively} \\
$S_f$ \hspace{0.5cm} \text{force to cause sliding} \\
g \hspace{0.5cm} \text{acceleration due to gravity} \\
C_s \hspace{0.5cm} \text{coefficient of viscous damper} \\
\omega \hspace{0.5cm} \text{natural circular frequency of the system} \\
\xi \hspace{0.5cm} \text{fraction of critical damping} \\
\mu \hspace{0.5cm} \text{coefficient of friction} \\
\theta \hspace{0.5cm} \text{mass ratio} = \frac{M_t}{M_b}$